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Original Communications.

A SHORT SUPPLEMENT TO DR. BARTON COOKE HIRST'S PAPER ON THE TREATMENT OF PUERPERAL ECLAMPSIA.

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Two measures of treatment were mentioned by Dr. Hirst in his paper read some weeks ago[1] which it appears to me ought to be enlarged upon.

The first of these was the use of morphine in the treatment of puerperal convulsions. It will be remembered that Dr. Hirst was cautious in recommending morphine, the hypodermic use of which is so strongly urged by some. He was good enough to refer to my own teaching as furnishing the foundation of his belief. It is true I have always advised caution in the use of morphine in Bright's disease, and with reason, I believe, because I have seen uremia precipitated by it. At the same time I am not surprised to hear it claimed that the drug has been of signal service in the treatment of puerperal convulsions. Modern clinical studies have cleared up the situation and experiment has confirmed its teachings. The truth is that morphine is dangerous mainly, I am almost tempted to say, only in chronic interstitial nephritis. The majority of cases of puerperal eclampsia are due to parenchymatous or epithelial nephritis. In these morphine may be used with comparative

[1] See GAZETTE for February, 1904.

safety, and brilliant results. But since interstitial nephritis is responsible for a few cases, some risks must be run if morphine is indiscriminately used. As a precise diagnosis is not often made, the safest course is to get along without it or defer it until other measures fail.

I have said that experiment has confirmed the results of clinical teaching, and explained them, and I will briefly recount the reasoning. It is well known that the normal kidney excretes many substances taken into the blood by the usual channels, some of which manifest themselves by an odor imparted to the urine—such as turpentine, which is recognized by the odor of violets; such as asparagus, recognized by a peculiar disagreeable odor remembered by all who have observed it. As far back as 1820, Halin noticed that turpentine failed to evidence itself when administered to a gouty patient, and seventeen years later Roger notes that in two gouty patients who partook of a meal of asparagus the usual odor was not exhibited. Opium has been frequently known to produce toxic effects in nephritis, as witness a teaspoonful of paregoric in one of my own cases referred to by Dr. Hirst. Mercurials are well known to be badly borne in nephritis, and salivation is easily induced by mercury administered in this disease. In like manner iodine, salicylic acid, and quinine are not excreted by diseased kidneys.

In 1897 Achard and Castaigne published results of the administration of methylene blue by hypodermic injection, five centigrammes of the powder being dissolved in twenty parts of sterile water and deeply injected into the buttock under antiseptic precautions. The patient was directed to pass his urine at the end of one, two, four, eight, and twelve hours, and so on as long as urine continued to be colored. In normal cases the blue or bluish-green tinge usually appears in the urine within the first half-hour, and always within an hour. In certain forms of nephritis it was found to be several hours before the color appeared. In normal cases the maximum coloration, a deep indigo, is reached in about three hours, and the urine is not clear for two or three days. The drug was given subcutaneously in order to obviate errors from varying rates of absorption due to temporary or permanent gastric and intestinal derangements, as illustrated by a case of gastric cancer in which the blue did not appear in the urine until the fifth hour when given by the mouth. Bard and Bonnet in France and Richard C. Cabot of Boston repeated these experiments, modifying and extending them, and arrived at the same general conclusion with Achard and Castaigne, viz., that impairment of the power to eliminate methylene blue is the effect of renal insufficiency, whether functional or organic, temporary or permanent.

Bard and Bonnet add the important fact bearing on our topic, viz., that while in interstitial nephritis there is delayed secretion of the blue, in epithelial or parenchymatous nephritis the blue passes through the kidneys if anything more quickly than in health, pointing to an excess of permeability rather than a deficiency. To this Potoski and Guenard added the further important fact that the blue passes the kidneys as quickly in eclamptic cases as in labors without eclampsia. Menu and Mercier confirm this as to the first appearance of the blue, but noted that in albuminous cases the excretion was prolonged and irregular, the amount of blue showing violent oscillations, accompanied by parallel oscillations in the amount of albumin and solids.

Here is the explanation sought. The convulsions of *parenchymatous* nephritis may be treated by morphine with safety because the renal epithelium is still capable of eliminating it. And since most of the cases of puerperal eclampsia occur in connection with parenchymatous nephritis, it is evident why results are often so brilliant. Should it happen, however, as is sometimes the case, more particularly in cases where the nephritis has preceded pregnancy, that the disease is interstitial nephritis, the use of morphine is attended with large risk.

The second measure alluded to is the treatment of uremic convulsions by hypodermoclysis or intravenous injection of normal salt solution associated with free sweating, and the sweat bath, with a view to dilution and elimination of the toxic agencies which produce the convulsions. I can confirm all that Dr. Hirst said about the value of this treatment, but in order to secure the best results I hold that the sweat should precede the hypodermoclysis; nay more, I think this is necessary in order to avert a danger which I believe exists in

connection with the use of hypodermoclysis; for it is quite possible to overload the venous side of the circulation and thus dangerously dilate the right heart. Indeed, I am not certain that I have not seen a fatal termination precipitated by such a course. If, on the other hand, the blood be first depleted either by bloodletting—and I am certain that we would do well to use bloodletting more frequently in other than puerperal cases—or by sweating, we then make room for the salt solution to be subsequently introduced. The depletion removes a certain amount of toxic matter, while that which remains is further diluted by the salt solution. The sweating and hypodermoclysis may be used daily and even twice a day in urgent cases.

A SMALL HOSPITAL EPIDEMIC OF PNEUMOCOCCUS INFECTIONS, WITH REMARKS ON THE TRANSMISSION OF PNEUMONIA AND THE METHODS BY WHICH IT CAN BE PREVENTED.

By David L. Edsall, M.D.,
and
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The extensive prevalence of pneumonia and the very high mortality of the disease have, within the last few years, been subjects of frequent discussion; and there is general interest in determining the manner in which the disease is propagated and the methods by which it can be controlled. We know that pneumonia is an infectious disease, and we know many facts concerning the bacteria that usually produce it. We recognize also that infections do not arise from mysterious sources that are essentially beyond human ken, but each day see more clearly the fact that those sick with infectious diseases constitute the supremely important sources of dissemination of those diseases. We are likewise growing into a clearer recognition of the equally important fact that bacterial diseases are not in part transmissible, in part intransmissible, but that they differ only in the readiness and directness with which they may be transmitted.

Yet the attitude of the profession toward the control of pneumonia has been somewhat passive; for in spite of this general knowledge there are certainly few physicians who adopt more active precautions to prevent the spread of the disease than to have the sputum from pneumonia patients destroyed, and perhaps to utter a gentle warning as to the possible danger in very close contact with those sick of the disease.

It is quite true that direct transmission of pneumonia from case to case seems to be comparatively rare; that the disease does not generally appear in epidemic form, but develops sporadically; and that the immediate sources of infection are, at present, usually not discernible. But these facts do not, in our belief, justify the statements recently made by a number of authors, that until our knowledge of the manner in which the disease is transmitted becomes more exact we cannot hope to exercise much control over the spread of pneumonia; and should not urge the general public to adopt measures for avoiding the disease, lest such suggestions cause undue apprehension. As a rule we are unable to protect individuals from pneumonia, and can only urge upon them general hygienic measures, such as those recently described by Reynolds. We can, however, by giving the public a proper understanding of the matter, probably prevent a large proportion of the cases of direct transmission; we can, in localized epidemics, search for the source of infection, and sometimes discover and destroy it; and we can with wisdom undertake somewhat more active measures than those usually adopted to prevent the spread of the infection from its chief source—*i.e.*, from those that have acquired the disease.

We are, to be sure, limited to general principles in carrying out most of these measures; since we cannot follow the course of the infectious material so clearly as we often can, for example, in those infectious diseases, such as typhoid fever, that are usually water-borne. It is, however, scarcely to be expected that special methods of preventing each individual infection, particularly those that are airborne, will be discovered for many years, if at all; consequently, for a long time to come, and perhaps for all time, our only method of controlling most infections will be through the use of the general principles of preventive medicine.

That such methods are effectual, although they work slowly, has become ap-

parent through the results in tuberculosis, which furnish an inspiriting illustration of the possibilities in combating a disease that is largely air-borne, when it is fought by a wide-spread attempt to institute general hygienic measures and by arousing general public interest. Tuberculosis is not the only disease that will respond to such measures. It has become, rather, as Clifford Allbutt puts it, "the flogging schoolmaster" driving in facts concerning the control of infections; and many of the principles that are used in preventing tuberculosis are applicable in controlling pneumonia. This is indicated by our general knowledge of the disease, and particularly by the literature on the subject of epidemic pneumonia, to some of which we shall refer. The fact that these measures may be less successful in pneumonia than in tuberculosis is no argument against their adoption, if they are likely to meet with any success at all.

We shall first report a series of recent observations of our own. While the number of cases is small, they exhibited some points that are of importance in relation to epidemic pneumonia.

When one of us (Edsall) went on duty in the men's medical wards of the Episcopal Hospital, April 1, 1903, there was, in the small side ward, which contains six beds, a case of extremely grave pneumonia, the patient occupying bed 2. This man was at that time but half-conscious and was completely prostrated. He had extensive consolidation of both lungs, and also arthritis of the right wrist-joint. He was evidently overwhelmed by pneumococci; for blood cultures gave a free growth of these organisms, not only when large quantities of blood were used, but even with tube cultures on hydrocele fluid, and when only two drops of blood were used.[1]

It is worth while in view of subsequent developments to note that on account of the patient's mental condition it was impossible to prevent his expectorating on the bedclothes and the floor. The next day he was still worse, and on the day after (April 3) he died. The bedclothes were, of course, entirely changed; the bed was aired, as usual; and the neighboring portion of the ward was repeatedly cleansed, both during and after the man's illness.

On April 4 a man in the second week of a mild attack of typhoid fever was admitted and put in this bed. When he had been in the bed about twenty-four hours, blood cultures were taken for the typhoid bacillus. To our surprise the culture showed a pure growth of pneumococci. This patient exhibited no leucocytosis, either at this time or at any subsequent period; and he had no signs of pneumonia or of any other local pneumococcic infection, except a fairly marked bronchitis, which might possibly have been of this nature. The pneumococcus could not be looked for in the sputum as he did not expectorate. The bronchitis persisted for ten days, but did not influence his general condition. He passed through a mild attack of typhoid fever and recovered entirely.

This man had meanwhile (April 5) been transferred from the previously mentioned bed in the side ward to the main ward. On April 6 a man of twenty-two years with sciatica was admitted. Because his suffering from the sciatica led him to be extremely noisy he was placed in the side ward, and chanced to be put in bed 2. He remained there for about thirty-six hours, and was then transferred to the main ward. Less than two days after this transfer had been made he developed pneumonia of the entire left lower lobe, which, however, was of mild and very brief course; the patient showed almost no evidence of toxemia except fever, which ran at about 103°. Crisis occurred on the third day, and undisturbed resolution proceeded rapidly from this time.

On April 8 a boy of fourteen with tubercular meningitis was placed in bed 2 in the side ward. He had previously been in bed 5 in the same ward for a week, and during that time had exhibited the ordinary symptoms of tubercular meningitis, without leucocytosis, and without any signs of pulmonary involvement. Two days after having been placed in bed 2 he showed an increase in temperature, which persisted; he developed a leucocytosis of 14,000; and his respirations grew rapid and remained so. He was already stupid and was breathing poorly, and it was difficult to make a satisfactory exam-

[1]This and the other bacteriological work reported in this paper was done by Dr. Ghriskey.

ination. It was never determined that he had pneumonia; but we have always suspected, in view of the facts concerning the other cases described in this report, that he had either pneumonia or possibly some other form of pneumococcic infection. Five days after having been placed in this bed he died. A post-mortem could not be obtained.

On April 14, the day after this patient's death, a man of forty with mild alcoholism was placed in bed 2 in the side ward. On the following day this man was apparently in almost normal condition, except that he was somewhat exhausted. On the 16th he exhibited a sudden rise in temperature to 102°, and had pain in the right side; and later in the day he developed clear signs of pneumonia of the right lower lobe. These symptoms continued for two and a half days, with otherwise very mild constitutional disturbances. There then occurred a sharp crisis; the pulmonary exudate underwent rapid resolution; and the man proceeded to a perfect recovery, though his convalescence was much prolonged by persistent and exhausting diarrhea.

On April 15 there was admitted and placed in bed 5 in the side ward (opposite to and about ten feet away from bed 2) a man at the end of the first week of typhoid fever. On the 17th a blood culture was taken from him with the expectation of finding the typhoid bacillus. Again a pure culture of the pneumococcus was obtained. This man, like the other typhoid patient, ran through a mild course of typhoid fever of the usual duration. He exhibited no leucocytosis, and had not even a noteworthy degree of bronchitis, and there was no evidence of any other complication of his typhoid fever. Only one peculiar clinical feature of the case was noted: the temperature showed remarkable diurnal fluctuations, ranging nearly every day throughout the fastigium of the disease from normal or from slightly below or above normal to 102° or 103° F. He recovered without any special incidents in his case.

When the second case of pneumonia developed in bed 2, and when, to our great surprise, a second pure culture of pneumococci was obtained in this ward from a typhoid patient, it appeared evident that a pneumococcus contagion was occurring. The ward was afterward formalized, and no cases occurred subsequently.

From the story that has been told it may seem that it was only carelessness or inattention that permitted these conditions to continue as long as they did. This, however, is hardly true, for the side ward is used largely for the temporary detention of patients that are noisy or are in other ways likely to cause disturbance in the main ward. Patients are usually kept in the side ward for a short time only, and are then transferred to the main ward; and of course there is, as a rule, no occasion to make a note of the beds in which they have been placed in the side ward.

At the time that these cases occurred the service was very active, as many as six or seven new cases being frequently admitted to the men's wards in a day, and it was not at first evident that events had followed the course described.

The typhoid patient from whose blood pneumococci were first obtained had already been in the main ward two days when the result of the culture became known. The man with sciatica had been in another part of the main ward for two days when his pneumonia developed. There was then a pause of about a week, during which time nothing especially suspicious happened. At the end of this period the second case of pneumonia developed, and the second instance of pneumococci in the blood of a typhoid patient appeared. After this the possibility of contagion at once suggested itself and was acted upon, and investigation showed the facts that have been stated concerning the beds that the patients mentioned had occupied.

This little epidemic, then, consisted of only two cases of actual pneumonia, together with two extremely peculiar cases in which pneumococci were apparently present in the circulation without causing any of the usual signs of pneumococcus infection. In spite of the paucity of cases the observations are, however, interesting in several ways: in the unusually striking evidence that a well localized source of infection had been provided by the original fatal case; in the evidence concerning the period of incubation; and in the extreme mildness of the infections. In connection with the latter point, the two

typhoid cases that yielded cultures of the pneumococcus are of especial interest, though their meaning is perhaps somewhat questionable. They require particular discussion, which will be given later.

The fact that pneumonia sometimes becomes distinctly epidemic is freely granted by all who have interested themselves in the matter, and is now sufficiently well known to be the subject of frequent comment in the public press. The belief that the epidemicity of the disease is a recently established fact is not uncommonly met with, though it is hardly necessary to say that such a belief is entirely erroneous. During the last quarter of a century attention has been especially directed to this point, but the fact that the earlier literature contains numerous references to pneumonia epidemics may be seen at a glance by consulting Hirsh. This author, in discussing the history of the disease, collected massive evidence of its epidemicity from the literature of the earlier part of the nineteenth century and from that of several preceding centuries; and many of the records to which he refers are unquestionably authentic. His reference to Savonarola apparently demonstrates that a belief in occasional epidemic outbreaks of pneumonia and apparently in the contagiousness of the disease existed at least as early as the middle of the fifteenth century.[1]

It is of interest that Savonarola, as well as numerous other early authors, mentions conditions not unlike those that existed last year in Chicago and this year in New York City. The terribly destructive epidemics of pneumonia in those cities have excited great public interest, and have been discussed by many of the laity, and indeed by many of the profession, as if they were unprecedented.

But while the epidemicity of pneumonia has long been recognized and is now well established, there has until recent years been a strong tendency to attribute the epidemics in general, as well as the individual cases observed in these epidemics, exclusively to atmospheric or other indefinite source, and to ignore or flatly deny the possibility that those sick with the disease may transmit it to others. At times a voice was heard insisting upon the occasional contagiousness of pneumonia, but stronger voices held the ear of the profession. It is not at all remarkable, however, that in recent years the attitude concerning this point has undergone a decided change. The demonstration that pneumonia is an infections disease and that certain well known bacteria (especially, of course, the pneumococcus) are its usual causes, has opened the way for the ultimate recognition of its possible contagiousness; and with the advance in the knowledge of infections, the rigid but artificial distinctions between contagion and infection that were once made have been gradually cast aside, until now there is no distinction between the two terms that can be constantly maintained—unless it be based upon necessity for residence of the causative agent in an intermediate host.

The literature on epidemic pneumonia makes it practically clear that infection may occur (1) through wide-spread atmospheric dissemination; (2) through the agency of some local source; and (3) through direct contagion from persons sick of the disease.

A review of the literature of the last three decades bearing upon the contagiousness of pneumonia can scarcely leave any one unconvinced of the fact that direct transmission sometimes occurs. It is quite true that absolute proof of this is exceedingly difficult to obtain, but the circumstantial evidence is so strong and has been so frequently furnished that it can no longer be rationally denied. A number of authors and many practitioners seem to be still skeptical concerning this point. They may properly remember, however, that even in diseases in which direct contagion is known to be the common method of transmission we cannot, in a vast proportion of cases, demonstrate that this has occurred or determine the source of infection, and that in tuberculosis, for example, absolutely indubitable evidence of the source of the disease is almost impossible to secure; yet men of rational thought scarcely deny, nowadays, that case-to-case transmission of tuberculosis frequently occurs.

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[1]Quoted by Hirsh: Handbuch der Historisch.-Geographisch. Pathologie, Bd. iii, p. 125; Savonarola (Practica, Tr. vi. cap. 10, rubr. 13, Venet., 1497, p. 113 b): "In civitate nostra Paduæ et Trevisii et Venetiæ 1440 de mense Martii autea et post apparuit pleuresis mala, quæ erat contagiosa, ex qua multi et plurimi moriebantur."

The chief evidence that contagion takes place in pneumonia is afforded by a large number of observations of instances in which several members of a household or other persons that had come closely into contact with each other have sickened with this disease soon after the development of a primary case among their number. In some of these instances the activity of indirect atmospheric infection was made extremely improbable by the fact that persons living in a region in which pneumonia was more or less epidemic have escaped the disease for a considerable length of time, until they had either visited or assumed attendance upon a pneumonia patient; but that soon after exposure they have been taken ill with the disease. In a number of these instances the person or persons who acquired the disease slept in the same room or in the bed with the original patient.

A number of broad general facts indicating the contagiousness of pneumonia have been brought out by Riesell: (1) As just stated, there are, in epidemics of the disease, many instances of escape from attack prior to visiting infected houses or to actual contact with other cases, while attack has followed such exposure. (2) In epidemics the disease is often confined to one settlement, and the cases occur chiefly among those coming into close relations with one another; while neighboring regions, in which the conditions of ground-soil, etc., are entirely similar, escape. (3) Usually there is, at the same time, a wide-spread distribution of the cases in a settlement that is actually infected; this, in connection with the last point, indicating transmission from case to case, rather than local soil-infection or the like. (4) In connection with the latter point, Riesell mentions also the rarity of absolutely isolated house epidemics; and further, (5) the time periods between the appearance of individual epidemics in small, isolated villages make improbable the view that these epidemics are always due to conditions of the atmosphere or of the soil. Riesell considers that these conditions cannot be entirely explained by peculiarities of the ground-soil or of the atmosphere, but that they can be explained upon the basis of transmission from person to person.

There are so many observations of instances in which contagion seems extremely probable, and this question is so thoroughly settled, that it is not advantageous to attempt to discuss the literature concerning it. A recent observation made by Spaet deserves, however, a little attention. In the epidemic at Neubrunn, which lasted from the early part of May to the middle of July, 1903, there were sixty-three cases in a population of 454, and over fifty of these cases occurred prior to June 6. Of the remaining cases, five developed within three days (from June 22 to June 24, inclusive); and all these five cases occurred in persons who had attended the funeral of a pneumonia patient on June 12, the funeral having been held in the infected house. While these facts do not demonstrate positively that these five persons had become infected in the house mentioned, the observation is of interest in its suggestion that a very slight exposure may cause infection.

The circumstances attending hospital epidemics of pneumonia offer some of the most striking evidences of its occasional contagiousness. That hospital epidemics occur has been clearly recognized for years; and since these epidemics are usually limited to one ward, the probability that contagion spreads the disease is always extremely great. Indeed, this has, in many cases, been almost absolutely proved. The cases reported by us are important in that they show with remarkable clearness the evidences of local infection derived from the original case.

We have referred to the fact that many epidemics of pneumonia are not due to direct infection from another patient or to a traceable intermediate infection—indeed, the contrary is naturally much more frequently the case. In wide-spread epidemics, in which a great many cases occur over vast areas of country, we are obliged to believe that the cause is atmospheric infection, like that which seems usually to produce epidemics of influenza; and the source of infection in such instances is, with our present methods, usually undiscoverable. There are also on record numerous instances of localized epidemics, in which it is apparently quite clear that the infection has been atmospheric, coming from some untraceable source. An example of this is the epidemic at Ober Sitke described by v. Holwede and

Münnick. In this village, with a population of about 400 persons, many cases occurred within a short time, chiefly among the children, of whom there were about fifty. Within thirteen days fifteen of these children sickened with pneumonia. At the time of this epidemic, owing to the extremely inclement weather, most of the children in the village had been kept housed; for this reason, and because many of those who became ill lived in widely separated houses, between which there had been no intercourse, it seems impossible that there could have been any question of contagion or of local soil-infection and the like.

In another class of instances evil sanitary conditions have been found in areas in which there were local epidemics; and this fact has furnished presumptive evidence that the bad sanitation was responsible for the outbreak, although no direct connection of the source discovered with any primary case or cases could be demonstrated.

An example of this is seen in the epidemic mentioned by Winter, which occurred in a localized portion of the town of Kappelrodeck, and persisted from November, 1890, to February, 1891. The chief interest in this epidemic lies in the fact that it occurred in a thickly populated alley, whose inhabitants were extremely poor and lived in particularly bad hygienic surroundings. The alley lay at the foot of a steep granite hill, impermeable to moisture, upon which manure and other refuse were regularly spread. Typhoid epidemics were common also in this district; and it seemed probable that the epidemics of typhoid and perhaps the pneumonia epidemic could be referred to the situation of the alley in relation to the hill. There was certainly every opportunity for typhoid infection to have occurred through infection of the drinking-water from the refuse-laden hill.

Instances of a character intermediate between that last mentioned and direct contagion—*i.e.*, instances in which there was evidence of soil-infection, but in which it was fairly clear that the soil-infection had come from earlier cases—are on record, as, for example, that of Chrostowski and Jakowski. These authors describe an epidemic that involved six persons. It occurred in a bakery, and was apparently due to the fact that, on account of imperfect plumbing, a temporary closet with an open trench had for some time been in use in this house. It was subsequently learned that for years past isolated cases of pneumonia had been regularly received each year from this house in neighboring hospitals. The soil had probably become infected from the earlier cases; and when the trench was dug the organisms had reached the air directly and had thus caused the epidemic. The authors state that they made bacteriological examinations of the soil and animal inoculations, and demonstrated the presence of the Friedländer bacillus; and the same organism was shown in two of the cases by aspiration of the lung. A similar observation is that made at the Amberg prison, where there had been several severe epidemics of pneumonia, and where each year numerous cases of pneumonia appeared among the prisoners. The soil there also was shown to contain large numbers of the Friedländer bacillus. Whether this organism was the cause of the cases of pneumonia or not, there can be little doubt that there was a local infection that had produced the repeated outbreaks, and had likewise caused the undue number of cases each year.

We would mention also a similar and very suggestive observation that was made by Tamforde in the epidemic that he describes, the history of which is, in brief, as follows: A man sickened with pneumonia in September, 1901. He lived in a small house in very restricted circumstances. He expectorated on sand, and his wife regularly emptied this sputum-laden sand on the manure-heap. The man recovered, and soon afterward the manure was spread over the neighboring fields, which were at that time flooded and frozen over. Mild weather prevailed during December and the early part of January. During the latter part of January and the early part of February strong winds blew most of the time from the west and southwest, and during this period a definite epidemic developed, almost all the cases occurring in persons who lived in the vicinity of the infected fields, and practically exclusively in those living to the east of those fields—*i.e.*, in the direct path of the wind coming from the infected area. The previously mentioned man who

had apparently produced this epidemic himself fell ill again with pneumonia. The course of events in this instance is too impressive to need comment.

The point of chief importance that is demonstrated by the literature on epidemic pneumonia is one already known, but not sufficiently well recognized, viz., that while we are limited to general hygienic measures in controlling extensive atmospheric infection, local epidemics may often be stamped out by making a proper search for their cause; and when direct transmission is active in producing the disease, we can frequently stop its progress at once by instituting sufficiently active measures.

Pneumonia, however, does not usually tend to become epidemic, and demonstrable contagion certainly occurs with comparative rarity. The point that is at present of chief clinical interest is to determine, as far as possible, the reasons for the occasional greater epidemicity of the disease, and for its occasional tendency to produce contagion. An insufficient amount of study has been given to this point especially by clinicians. Netter, Riesell, and others refer to the fact that actual contagion seems to occur chiefly when the contact is intimate, and that the danger of contagion is considerable only in the cases of those who are in attendance upon pneumonia patients or occupy beds near them. This usually seems to be true, but not always, as contrary observations have been made. Contagion is also, of course, dependent to a considerable extent upon the presence of other infections, particularly influenza. It is well known that pneumonia becomes especially prevalent during influenza epidemics, and the literature also demonstrates that evidences of direct contagion from pneumonia cases have been noted with especial frequency at such times. The latter point was strikingly illustrated in the ward epidemic of Lancereaux and Besancon, which involved four ward patients, an attendant, and an externe. The six cases of ward infection, all of which were fatal, occurred within a few days of one another, and at a period when grippe was epidemic; and several of those who acquired the disease either had actual grippe or had been in attendance upon persons with that disease.

Another possibility that may be briefly mentioned is that suggested by Dieudonné, who notes that epidemic pneumonia has repeatedly been observed in human subjects at the same time that epidemic pneumonia has been prevalent among horses, and that many of those having the care of the sick animals have acquired the disease. It is wholly possible that pneumonia may occasionally be transmitted from horses or other animals to man.

Most important subjects of investigation, however, are those relating to the virulence of the organisms producing the disease, and to the viability of these organisms in different media and under various conditions. Owing to the older teaching of bacteriologists, the view is prevalent among clinicians that the pneumococcus rapidly loses its virulence and dies out in the sputum of pneumonia patients and in culture media. A series of investigations made within the last ten years have, however, shown that virulent pneumococci may at times persist for a considerable period in the sputum of convalescents from pneumonia (Bignami and Marchiafava, and others); and it has also been demonstrated that the organisms may long remain viable and virulent in preserved sputum (Foa and Bordoni-Uffreduzzi), and in their natural media—dust, earth, etc. (Germano). Bordoni-Uffreduzzi particularly tested the persistence of the virulence of the pneumococcus in sputum, collecting the sputum on linen and drying it, partly in diffuse daylight and partly in direct sunlight. As was to have been expected, the virulence persisted much longer when the sputum was not exposed to direct sunlight. Under such conditions it was marked even after forty-five days.

Germano carried out an important study concerning the viability of the pneumococcus in various natural media. He found that when mixed with dust, sand, and earth, the pneumococcus exhibits a varying degree of viability, depending to some extent upon the medium. One variety died rapidly, while another lived for as long as forty days in dust and sixty days in fine sand. When blood containing the latter diplococcus was mixed with sand, or when similar experiments were carried out with pus containing diplococci or with sputum containing these organisms, living, virulent diplococci were recovered as long

as 140 days afterward. Germano agrees with Kruse and Pansine in referring the discordant results of various previous investigators to differences in the variety of the organisms studied and in the media used. He believes that he has clearly demonstrated that a pneumococcus planted in its natural media may be found to be still living after nearly six months. It apparently retains its virulence even better when dry than when moist—a matter of evident importance in connection with air infection. Low temperatures are somewhat unfavorable to its growth, but not by any means absolutely so. Chantemesse made similar observations and attributes the greater resistance of the organism when in such media to the fact that it is then enclosed in an albuminous mass and is thus protected from absolute drying. Chantemesse refers to a hospital epidemic of pneumonia that was apparently controlled by taking care that no dust was stirred up, and that the floor was daily treated with disinfectants.

Germano observed that a variety of pneumococcus midway between a diplococcus and a streptococcus in its characteristics showed particularly marked persistence of viability, as well as of virulence. That organisms with such characteristics are usually virulent has been noted by others. Germano's organism was isolated from a case of pneumonia that occurred during a very severe epidemic of the disease. There was good reason, in consideration of his results in this instance, to believe that this special epidemic was due to the great resistance of this diplococcus, and to its dissemination through the air.

The observations mentioned are of great importance in relation to the hygiene of pneumonia cases, since they demonstrate very clearly the importance of infection of soil, dust, etc., in disseminating the disease. They also furnish experimental evidence of the fact, already made reasonably apparent by the clinical observations quoted, that a local source of infection may persist for a long time and needs to be looked for, and if found, destroyed; and they offer an explanation of the occasional persistent occurrence of pneumonia in hospital wards and in certain houses, and likewise give us a clearer conception of the possibilities of contagion. They demonstrate extremely forcibly, too, that we may apply to pneumonia Koch's recent emphatic statement concerning the prevention of typhoid fever—*i.e.*, that success depends chiefly upon rigid care in keeping the infection from spreading beyond those sick of the disease, not in devoting attention to the almost hopeless task of attempting to control an infection that is already scattered broadcast.

While we have no new and startling recommendations to make, we do believe that it is possible, without unduly exciting the laity, and without demanding an unreasonable amount of trouble and expense, to do more than is commonly undertaken to control the spread of the disease. There is no doubt that some instances of direct transmission could be prevented by educating the laity in general to understand that there is some danger of acquiring the disease from those ill of it. The fact that the danger is usually slight does not justify one in ignoring it; and it is not necessary to cause excitement in uttering a warning.

Reynolds goes so far as to recommend the use of measures of control similar to those adopted in cases of diphtheria. It seems to us that the strict isolation and disinfection practiced in that disease are at present scarcely feasible in pneumonia. Nevertheless, we consider it to be wholly practicable to maintain a fair degree of isolation, and to insist that those in ill health, especially if they have catarrhal processes of the respiratory tract, influenza, or similar conditions, shall not attend upon the patient or visit his room. The same rule should apply to all children, whether sick or well.

In hospital work, the ideal—but at present almost impracticable—procedure would undoubtedly be to isolate cases of pneumonia in a separate ward. As previously stated, however, the evidences of direct transmission seem to have been observed chiefly when the contact has been comparatively close; therefore, as Netter has suggested, it would perhaps be sufficient, and it would certainly be wise, in hospital wards to separate pneumonia cases as far as possible from other patients; and one should insist emphatically that they be well separated from persons with influenza, typhoid fever, and other depressing acute diseases.

It is customary among well trained phy-

sicians to have the sputum from pneumonia patients carefully collected and destroyed; but this custom is by no means general, and its importance may wisely be forced further upon the profession, as well as upon the laity. Even, however, when this measure is properly carried out it is unquestionably insufficient. Many investigations during the past few years have taught us that tubercle bacilli are scattered about freely by tuberculous patients in coughing, sneezing, etc.; and the same thing has been shown to occur with other bacteria, and undoubtedly occurs in pneumonia. Even more important than this is the fact that it is often absolutely impossible to collect sputum carefully, since the patient is frequently delirious or half-conscious, and the bedclothes and the floor are constantly being infected. The only satisfactory procedure is to have the bedclothes boiled, and the furniture and the floor thoroughly and frequently cleansed. If possible, in private practice, the room should at least be kept well aired and closed off from the rest of the house for some time after the disease is over before being reoccupied by the patient or used by any other person.

We strongly suspect that the future will see the custom of actually disinfecting after almost every bacterial disease. At the present time, if evidences of direct transmission of pneumonia appear in a house or in a hospital ward, it is certainly incumbent upon the attendant to undertake actual disinfection as soon as possible. If there is any evidence that a local source of infection is producing a local epidemic, or if an unusual number of cases have occurred from year to year in a local area, it is also incumbent upon the attending physician to attempt to discover the source of this infection and to make efforts to destroy it.

The control of the disease would also be largely aided if it were required that pneumonia be reported to health boards. It is evident that this will soon be done in some of our large cities, and it unquestionably should be done generally.

If measures such as those that we have sketched were carried out persistently in hospitals and in a considerable proportion of private cases, and if at the same time public interest in the use of general hygienic measures such as those recommended by Reynolds and other health officials were widely aroused, we do not believe that such pessimistic views as those that have recently been repeatedly expressed in regard to the influence of hygiene on pneumonia could long be maintained. Any control over the disease that we may be able to exercise will necessarily come slowly, but we certainly shall not acquire much control until we adopt more active and more detailed measures than those we now employ.

We have referred to the mildness of the infection in our cases. It is frequently stated by writers on pneumonia epidemics that the disease, when readily transmitted, runs a grave course, exhibiting many nervous symptoms, great prostration, often enlargement of the spleen, and other evidences of severe infection. This is usually true, but not constantly, for various authors have described epidemics in which mild cases were common. Spaet, for example, mentions a number of cases in which the crisis occurred by the fifth day; and Osthoff refers to a number of cases of abortive form, which lasted three days or less. In our two pneumonia cases the course was very mild and extremely limited, the longer case having had its crisis at the end of three and a half days, and the other having ended by crisis in a little less than three days. If the two other cases be admitted as pneumococcic infections, they must be considered to have been extremely mild, having produced practically no symptoms or discoverable signs of local disease. This fact is of interest, in that it demonstrates that a high degree of virulence is not an essential accompaniment of transmissibility; and it shows that transmission should not be suspected only when the cases are severe.

As we have also indicated, the observations are of interest in relation to the period of incubation. There are very few records that give any direct indication of the minimum length of the period of incubation—a fact that is natural, as it is impossible in most instances to state when the opportunity for infection has occurred. Our cases are of unusual importance in this regard, because they demonstrate with striking clearness the length of the period of incubation, and show that it must have been less than forty-eight hours in one

case, and only a little more than that length of time in the other. Hoffmann considers that the period of incubation is usually about nine days; but in an epidemic he observed cases in which the shortest incubation period was probably about three days, the maximum having probably been about twenty-five. Other authors—Waibell, for instance—have observed evidences that the period of incubation may be very brief. Its greatest possible length is, of course, exceedingly difficult to surmise.

The two cases that we have mentioned, in which pneumococci were discovered in the circulation without evidence of local lesion, deserve brief discussion. We have no doubt that the results of the cultures in these cases were entirely reliable, and see no reason to question the belief that these patients had pneumococci in the circulation. The blood was drawn with the utmost care as to asepsis, and if any accidental outside infection occurred, these were the only instances of it in a large series of blood cultures made by one of us (Ghriskey) in the same wards and at about the same time. The cultures were taken by adding 10 cubic centimeters of blood to 300 or 400 cubic centimeters of six-per-cent glycerin bouillon. Subcultures were also made on agar, glycerin agar, and hydrocele fluid. All the cultures were characteristic, and they leave no reason for doubting that the organisms were pneumococci.

These observations are not entirely without parallel. Prochaska has reported four cases in which there was no pneumonia and no evidence of other local pneumococcic infection, except bronchitis, and in one case hemorrhagic nephritis. One of these cases was fatal, and the absence of pneumonia was shown at autopsy. In all these cases pneumococci were found in the circulating blood. In two of the cases the bronchitis was slight. In all the cases, however, the symptoms were severe.

Recently, Baduel and Gargagno have described a more extensive and more pertinent observation, though the details are given with unsatisfactory brevity. The points of chief importance in their observation are as follows: eleven members of one household were demonstrated to have pneumococci in their circulation. Some of these patients were seriously ill, and the cultures were made for that reason; while in others the clinical symptoms were so slight (bronchitis, pharyngitis, etc.) that no especial attention would have been paid to these cases had it not been for the household epidemic of pneumococcic infection that was already known to be present. Because of this epidemic blood cultures were taken, and they showed pneumococci in the circulation in all the members of the household.

The profession has, chiefly through the work of Prochaska, been led to give up the idea that positive blood cultures of pneumococci necessarily mean a grave prognosis. It is certainly questionable, however, whether we have even yet recognized the frequency with which pneumococci and other organisms enter the circulation, and are recoverable by culture, particularly when there is very little general evidence of disease. Most clinicians hold to the view that positive blood cultures, in cases of supposed general septicemia, etc., are confirmatory of the diagnosis of what is termed septicemia, and also have extreme prognostic significance. It may be that this idea also will have to be greatly modified. It certainly will if the observations made by Bertelsmann are substantiated. This author has made a large series of blood cultures in cases of local surgical conditions, such as abscess, periostitis, etc. In forty-eight cases he found bacteria in the circulation; twenty of these patients died, after exhibiting the symptoms of general septicemia; but most of the twenty-eight others showed no evidence of septicemia, and in many instances there was nothing but what we are accustomed to consider definitely localized pyogenic infection. Such observations if confirmed must modify one's views concerning the clinical significance of positive blood cultures in various conditions; and they are also likely to have an interesting influence upon the question whether many infections, such as pneumonia, are first local and then general, or *vice versa*, as well as upon a number of other points of importance in the study of infection and immunity.

It is worthy of note that in our two cases that are now under special discussion pneumococci were discovered through

the purely accidental fact that we were at the time interested in making a series of cultures for typhoid bacilli, and thereby chanced to light upon the pneumococci; and both Prochaska's and, particularly, Baduel and Gargagno's cases were discovered solely through deliberate examination of a series of cases that seemed from the ordinary standpoint unlikely to yield pneumococci. This is of interest because bacteria are usually searched for in the circulation only when there is good reason to anticipate that they may be there.

It is important on both theoretical and practical grounds that we should gain more extensive and more exact knowledge as to the frequency with which, by modern methods of culture, bacteria of various kinds can be found in the circulation when clinical indications of their presence are absent, but especially when exposure to the possibility of infection has occurred. It is possible that bacteria may not infrequently enter the circulation in large numbers and be recoverable by culture, and then be rapidly killed off; hence special interest would attach to blood cultures taken soon after exposure. In both our cases the cultures happened to be taken within thirty-six hours of the first exposure.

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THE IMPORTANCE OF EPISTAXIS IN THE DIAGNOSIS OF NASAL DIPHTHERIA.

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That diphtheria, like smallpox, was known to the ancients is well authenticated knowledge; and several writers of antiquity described the symptomatology of its laryngeal development. Artæus and Galen rendered remarkably clear accounts of the "membranous tunic," etc., observed in this disease. In America, Josselyn observed and described diphtheria about the middle of the seventeenth century, and in 1659 three children in a family in Roxbury, Massachusetts, were fatally stricken by the malady of "bladders in the windpipe."[1] Despite the wonderfully accurate study of Samuel Bard[2] (1771), however, it was not until the nineteenth century that nasal diphtheria, even as an extension of the tonsillar or pharyngeal affection, seems to have attracted much attention.

In his scholarly book upon children's diseases, J. Forsythe Meigs[3] (1858) mentions the occasional extension of the diphtheritic deposit to the nasal mucous membrane, but says nothing of the epistaxis which may mark such an event. He does speak of the "expulsion of sanguinolent fluid" (from the mouth) in bad cases of putrid sore throat. At an earlier date, however, Francis Condie[4] (1847) gave the following classic account: "When the disease extends through the posterior nares to the mucous membrane of the nose, the patient is unable to respire through the nostrils; from these there takes place a discharge of serous, yellowish, and flocculent or bloody serum, often of a very fetid odor, and which produces more or less inflammation and excoriation of the external openings." Neither Meigs nor Condie nor other writers of their time, European nor American, seem to have

noted the occurrence of primary nasal diphtheria.

Even in the literature of modern times the question of epistaxis as an evidence of nasal diphtheria does not always receive the attention that it merits. Thus Tyson[5] does not mention nasal hemorrhage under this heading, neither does Rotch[6] (except in his description of malignant diphtheria) nor Taylor and Wells.[7] Oppenheim[8] says: "Occasionally in the thin mucopurulent discharge there may be traces of blood." Dillon Brown[9] yields similar testimony. Ashby and Wright[10] state that "there may be only a purulent discharge with blood;" and J. Lewis Smith[11] mentions that "hemorrhage sometimes occurs in nasal diphtheria." The statements of Holt,[12] Lennox Browne,[13] and Nothrup[14] are far more specific. Holt, speaking of catarrhal diphtheria, says: "There is a persistent and usually abundant nasal discharge, which is thin, irritating, and occasionally streaked with blood, and this may continue for weeks. In most of these cases constitutional symptoms are absent, etc." Again, dwelling upon severe diphtheria, "when the nose is first affected there is an abundant discharge of serum and mucus occasionally tinged with blood, which may continue several days before any membrane is visible." Later he states that "occasionally large nasal hemorrhages occur which may necessitate plugging the nares." The testimony of Browne and Nothrup need not be quoted at length, for it is quite identical with that of Holt. The former also adds: "The discharge is often tinged with blood, which symptom is occasionally intensified by sudden and profuse attacks of epistaxis." The latter authority contributes the following interesting and suggestive testimony: "It is not an unusual occurrence at the New York Foundling Hospital to have a child brought to the physician with a history of a foreign body in the nose. Here will be found a thick bloody discharge from one or both nostrils, swelling of the mucous membrane, and occasionally pseudomembrane to be seen in the nasal passage. In these cases a bacteriological examination serves to render a positive diagnosis, and the diphtheria bacillus is quite often found instead of the supposed foreign body."

Summarizing the views of the authorities who have rendered evidence we may practically revert to Condie's description —for obstruction to nasal breathing, the discharge of a serous or seropurulent fluid mixed with blood, the fetid odor of the discharge, and the excoriation of lip and nostrils furnish us with a symptom-complex most suggestive of nasal diphtheria. Add the cervical adenopathy, and the clinical picture is complete. Such local manifestations may occur in conjunction with marked systemic disturbance; they may mark the course of what is apparently a mild lacunar tonsillitis; or they may occur alone; but in any case diphtheria should not be excluded until an examination has been made with a nasal speculum and a good reflected light, and until a competent bacteriologist has furnished his report of a culture. The writer would insist upon one point, however, and that is that tingeing of the nasal discharge with blood, and even rather free bleeding, is not exceptional in nasal diphtheria, rather it is the rule. The text-books that give lists of the causes of epistaxis should accord diphtheria of the nose a separate and prominent place.

If this last view is a correct one the symptom nosebleed becomes one of great importance, for it may suggest the true nature of the malady in the very cases which are the greatest menace to the community, viz., the mild cases. The ideas of many medical men concerning the severity of nasal diphtheria are quite at variance, some thinking it the most severe form of the disease under consideration, others deeming it quite mild. As a matter of fact both views are correct. When the posterior nares are affected, rapid systemic poisoning usually ensues; these cases may indeed manifest profound toxemia before the cause of it is found or even suspicioned. Such a case the writer saw not long since with Dr. Luther C. Peter, the child affected receiving in all 28,000 units of antitoxin. On the other hand diphtheria starting in the anterior nares, and involving one or both nostrils, may exist for a considerable period of time, and yet the patient may evidence little or no constitutional disturbance. Lennox Browne succinctly states that "whilst cases of faucial diphtheria in which the exudation extends to the nares represent a very malignant type of the disease, on the other hand the deposit which sometimes though rarely

commences in the nares is at least occasionally of a quite subacute and non-toxic character." Rotch writes: "Diphtheria sometimes begins in the nose and spreads no further. In these cases the disease is usually of a mild type, but it is infectious. . . . These cases are probably a prolific source of infection to the community at large."

In the winter of 1893-4 the writer saw at St. Joseph's Hospital a boy of four years who had a purulent and bloody discharge from the left nostril. The secretion was offensive in character, had irritated the upper lip, and he displayed considerable tumefaction of the posterior cervical glands. The boy's temperature was 99°, he was pale, and had been failing in health. In examining him for the presence of a foreign body in that nostril, a piece of pseudomembrane was found and was readily removed with forceps. This was given to a pathologist for examination, but a report upon it was not received. The evidence of diphtheria in this case is of course incomplete, but in view of subsequent experiences there is little doubt in my mind that a culture would have yielded the Klebs-Loeffler bacillus.

Three years ago a boy of twelve years was brought to the Polyclinic Hospital suffering with a paraplegia unquestionably dependent upon peripheral nervous cause. In reply to a question concerning an attack of diphtheria, the lad's mother replied: "No, doctor; he never had diphtheria, but his little brother died of it about six weeks ago, and at the time he was sick this boy had the worst discharge from the nose that I have ever seen." Further questioning elicited the history of moderate nosebleed at the time he had the nasal discharge. As if to complete a chain of strong circumstantial evidence, the boy was already regaining the use of his legs.

The following three cases probably record the history of a mistake—one from which the writer greatly profited, for in future he will always culture such cases as I and II.

CASE I.—Kenneth N., aged nine years, was taken ill April 15, 1902. His previous history is of no moment in this connection, and for brevity's sake is omitted. The onset of the present illness was quite sudden, being characterized by "chilly feelings," headache, pain in the back, and soreness of the arms. The writer saw him on the 16th, the day following, when his temperature was 101°, his pulse 100, and his respirations 28. The physical examination revealed only slight tonsillar swelling and redness accompanied by a blotchy (erythematous) redness of the soft palate and uvula. The lymph nodes at the angles of the jaw presented little swelling, but some tenderness to pressure. The posterior cervical glands were somewhat enlarged. The first sound of the heart was rather weak, and at the time there seemed to be both a presystolic thrill and a murmur.

The boy's mother and father had quite recently suffered attacks of epidemic influenza, and it was thought that the little patient had the same disease. On April 17 his throat was much better, and his temperature varied from 99° to 99.8°. He had on that day, however, two slight attacks of epistaxis. These were not repeated. On April 19 his throat was again quite normal in appearance, and his temperature was subnormal. He regained his former color and strength rather slowly, however, a result that one naturally expects in the wake of so depressing a disease as grippe.

CASE II.—Dorothy N., aged twelve years; sister of Kenneth. She was taken ill in practically the same way as her brother, April 20, 1902, and her attack differed from his in two respects only, viz., she regained her strength and ambition much more slowly, and she had numerous attacks of moderate epistaxis. Indeed, I treated her nose with adrenalin solution and antipyrin sprays until May 7. This child, unlike her brother, had been subject to nosebleed in former years (probably caused by a small amount of adenoid tissue).

Neither of these children displayed the smallest particle of visible membrane, and in Dorothy's case I used a nasal speculum.

CASE III.—Caroline N., aged four years; sister of the above. Became suddenly ill at noon, May 10, 1902, when she had a distinct chill, complained of headache, and was found to have fever. I saw her at 3.30 P.M. on the same day.

April 10, 1902. The patient is a splendidly nourished child. Her temperature is 102.4°, her pulse 130, and her respirations 30. Her face is pale and her expression

dull, her appearance suggesting an overpowering with some systemic poison. The pupils are equal, quite small, and respond actively to light. There seems to be some slight interference with nasal breathing. Her tongue is clean and moist. There is no complaint of sore throat, and examination reveals nothing but a hyperemic area upon the right tonsil, about one-quarter of an inch in diameter. Her lymph nodes are not swollen in any situation, nor does the examination of the thorax and abdomen reveal anything of interest.

May 11. She is no better; A.M. temperature 103°, P.M. temperature 103.4°. The nervous symptoms are more marked, the child twitching and starting in her sleep, and appearing stupefied in her waking moments. In the morning the right tonsil presented the typical picture of lacunar tonsillitis, but the exudate was not removed by a justifiable amount of force. In the afternoon the left tonsil was becoming involved in a similar process. The throat was cultured.

May 12. The child is unquestionably much worse. She seems in a stupor most of the time, and is quite hard to arouse. She does not take her nourishment well. Her temperature is 103°, and her pulse, which is thready, is 140. The respirations are somewhat stertorous. The face is blanched, and altogether it is quite apparent that she is a dangerously ill child. There is grayish membrane upon both tonsils, but it is still quite patchy. There is also more tonsillar swelling than is usual in diphtheria. The typical zone of hyperemia extends beyond the borders of the membrane, however. It being Sunday a report from the bacteriologist could not be obtained. Antitoxin (concentrated), 2000 units, was injected at 1.30 P.M.; at 7 P.M., though concentrated serum had been used, she evidenced the type of reaction to antitoxin so frequently observed in the early days of this treatment. The temperature was 104.4°, but her face was flushed and the pulse full and bounding. At 11 P.M. she was sleeping quietly and naturally. The temperature per rectum was 101°, and the pulse strong.

May 13. A positive report was obtained from the Bureau of Health. Morning temperature 100.4°, evening 99°. The membranous patches exhibit curling at the edges in a number of situations.

May 14. The throat is free from visible membrane. The temperature is subnormal, and the child is active and lively, resenting her enforced stay in bed. She has a ravenous appetite.

May 15. To my surprise a small patch of membrane was noted upon the left surface of the uvula. Though it seemed improbable, because her throat was so easy to inspect, the conclusion was reached that this had escaped attention in previous examinations. Her temperature was normal and her activity had reached the uncontrollable stage. That evening the mother 'phoned me that the child's temperature had risen to 101.4°, though she attributed this to nervous causes, and requested me not to call until morning.

May 16. Thick white membrane (emplastered) is observed upon the left half of the uvula, and it is surrounded by the typical zone of redness. Her temperature is 102°. Antitoxin (concentrated), 2000 units, was injected at 11 A.M. By evening the temperature had fallen to the normal point, and never rose again.

Her convalescence was slow so far as regaining her former weight was concerned, but was otherwise progressive and uneventful. The throat was germ-free May 24, 1902.

This child did not attend kindergarten, nor had she been exposed to any known infections outside of her own home. The family had recently moved into a large new house, with hardwood floors, and modern sanitary plumbing. Though the matter must remain forever unanswered, the writer feels morally certain that the disease had been conveyed from the school to her by her brother or sister, and that both of the last mentioned had had the catarrhal form of the disease.

To diverge from the major subject, Case III was wonderfully instructive from the standpoint of treatment. A desperately ill child responded in the course of a few hours to antitoxin, remained quite well for two days, suffered a relapse, and again showed prompt improvement when antitoxin was injected the second time. Such a case is far more valuable than are some statistics in demonstrating, if one need demonstrate at the present day, the specific value of Behring's great discovery. Incidentally it furnishes a powerful argument against the use of small repeated doses of

antitoxin, as recommended by high authority. The child responded to the first dose, and for some time after it there was no indication that more was needed. Yet she relapsed in three days.

The etiologic relationship between the following cases (IV and V) admits of no doubt:

CASE IV.—Emanuel K., aged six years. The writer saw the patient for the first time on October 7, 1903, and elicited the following history of the existing illness: Just one week before, while at school, the patient had a slight attack of epistaxis. This was attributed to an injury to the nose sustained a few days before. The following day nosebleed occurred several times. On the next day, Friday, October 2, he had some fever when he returned from school, and epistaxis was continuing at intervals. He was kept in the house on Saturday and Sunday, but returned to school on Monday and continued in attendance until Wednesday, October 7, the day that I saw him. His nose had been "stopped up" since he was taken ill, and he had snored in his sleep. In other words, he had been sick for just one week, and had attended school for five days. That afternoon (Wednesday) he had been taken to St. Mary's Hospital in order that the cause of the continuing nasal hemorrhages might be ascertained. The physician in charge of the nose and throat dispensary told the mother that the disease looked like diphtheria, and he made a culture from the boy's throat.

Present state: The boy is pale and slender, and his expression is dull. His lip is not excoriated, nor are the external nasal orifices. There is no marked odor to the breath, though the mother states that there has been. Just within the right nostril upon the septum is a small superficial ulcer, and a similar one, slightly larger in size, is seen just posterior to it. About one inch within the nostril is seen some clotted blood, and just back of that what appears to be a piece of loose white membrane. In view of the recent nosebleed no attempt was made to remove the latter. The tongue is clean and pale, and the tonsils are not enlarged. Indeed, the whole throat is quite pale. The cervical adenopathy is marked, and the superior glands of the posterior cervical chain are very tender. His temperature is 100.4°, his pulse 120, somewhat weak, and displaying considerable irregularity. His knee-jerks cannot be obtained.

His case was reported to the Bureau of Health as a probable case of nasal diphtheria, and a request was made for immunization of the other children in the event that the culture yielded a positive result. [NOTE: This first culture must have shown negative findings, for I heard nothing further from the Bureau until the second culture, taken from the right nostril, was sent in. The immunization was not carried out.]

The boy was isolated, a strict quarantine was initiated, and his father was directed to secure 4000 units of antitoxin. Through some mistake he obtained but 1500 units, and though I injected this but little result was expected from it.

Oct. 8, 1903. The boy's temperature is normal, but his nose still bleeds freely.

Oct. 10, 1903. A culture tube inoculated from the secretions of the right nostril was sent to the Bureau of Health. (This was reported upon positively two days later.)

The further history need not be recorded at length. The pulse characteristics (rapidity, weakness, and irregularity) obtained for nearly a fortnight, but he had no more fever. He had a splendid appetite and gained in flesh despite enforced rest in bed. Until October 23 epistaxis was of daily occurrence, two attacks usually being noted in the morning.

The boy was treated with hydrargyrum chloridum corrosivum in combination with tincture of ferric chloride, and was given strychnine in liberal dosage. His nose was sprayed every three hours with

Acid. boric., q. s. ad ft. sat. sol.;
Hydrogen. peroxid., f℥ijss;
Glycerin., f℥ss;
Aq. destillat., q. s. ad ft. f℥iij.
Misce et solve.

His nose did not become germ-free until October 22, then I believe as a result of the following procedure: Both nostrils were thoroughly sprayed with the solution just mentioned. The nares were then swabbed as thoroughly as possible with eucaine B (one per cent) and solution of adrenalin chloride (1:10,000). The visible nasal mucous membrane which could be reached was next swabbed with argyrol (10 per cent). The nosebleed occurred but once

after this treatment was carried out, and was then but slight. The treatment was pursued daily until October 26.

CASE V.—John K., brother of the above, aged four years. Taken ill the evening of October 9, about forty-eight hours after the isolation of his brother. The following morning, October 10, he was found to have high fever (104°) and a pulse of 124. He shows an inclination to sleep most of the time, though his sleep is restless. He presents the facies and thoracic deformity of adenoids. His tonsils are little swollen, but they and the posterior pharyngeal wall are studded with gray membranous patches. The lymph nodes at the angles of his jaw are much swollen. (A culture made from his throat was reported upon positively two days later, Sunday intervening.) He was injected with 3000 units of the city antitoxin at 5 P.M.

The following morning his temperature was 101.2°, and he seemed much brighter. His sleep was still much disturbed, and his breathing in sleep noisy. The glands at the angle of the jaw were greatly swollen. The throat showed little change. His evening temperature rose to 102°, but he seemed so much better in all other respects that antitoxin was not given. The following day the A.M. temperature was 100° and the evening 98.8°. The throat was free from visible membrane on the evening of October 12, and germ-free October 17. For more than a week he displayed bradycardia, once as low a pulse rate as 58, and on one occasion he became partially unconscious and cyanosed. (His mother promptly administered brandy.)

The writer has never seen death from epistaxis in nasal diphtheria. He is much indebted to his friend, Dr. Frank C. Hammond, for the brief notes of the following cases:

CASE VI.—E. B., male, aged four years and nine months. On the evening of October 11, 1903, the patient complained of a little sore throat. The following morning this seemed worse, and Dr. Hammond was called. The left tonsil was found swollen and covered with a greenish membrane. The following day, October 13, a positive diagnosis of diphtheria was made, for the uvula and opposite tonsil were uniformly plastered with membrane. The cervical glands were much swollen. On the third day of the disease the diphtheritic process extended into both nares, and during the evening of the same day occasional epistaxis was observed. On the fourth day several severe hemorrhages occurred, and during the intervals there was a more or less continuous oozing of blood. During the night of the fourth day the epistaxis was still more severe, a slow oozing persisting between the spells of violent hemorrhage. All of the hemorrhages took place from the right nostril. The child died during the early hours of the fifth day, completely exsanguinated. At the time of death there was enormous enlargement of the cervical lymph nodes. The temperature range was low, 101° being the highest temperature noted. The face was blanched at the beginning, and continued so throughout the disease. There was a slight fetor to the breath, but no very marked odor. A digital examination failed to reveal the presence of adenoids. Beginning that treatment on the second day, the child was given in all 9000 units of antitoxin. Local treatment, including first styptics, then plugging with cotton, then with gauze, then with gauze saturated with adrenalin solution, was unavailing.

It was thought that the little fellow had contracted the disease from a child living next door who had died from follicular tonsillitis (?).

The evening that the writer completed this paper, October 10, he was asked by Dr. S. M. Vernon to see the following case:

CASE VII.—Helen ——, a splendidly nourished child, aged four years. The patient had been taken ill at 2 P.M. on the preceding day, just thirty-three hours before I saw her. At first she complained of headache and of slight sore throat. When Dr. Vernon saw her the following morning she presented the typical picture of a mild lacunar tonsillitis. Her temperature, however, was low. During the day she seemed quite stupid, sleeping most of the time, and she breathed noisily through her open mouth. In the evening Dr. Vernon was again called, because she had had several spells of severe nosebleed.

It was impossible to examine the child because she was nervous, and when she struggled or cried her nose bled furiously. The blood simply gushed from both nos-

trils. Her mouth was widely open and her respirations were stertorous. She had not the physical stigmata of adenoids. There was already much swelling of the glands at the angles of the jaw. Her temperature could not be taken in the mouth or rectum, and as her skin was very moist the axillary record, 100.4°, was scarcely to be relied upon. The pulse was strong, but the rate variable, ranging from 144 to 168.

Bearing in mind the case of Dr. Hammond the writer advised the administration of a large initial dose of antitoxin, 4000 units. This was injected as soon as procured.

Dr. Vernon reported to me by telephone the following day, stating that the child was much better and that there had been no return of the epistaxis.

The cause or causes of epistaxis in nasal diphtheria have been to the writer a problem of interest. The number of cases cited here is too small to furnish a basis for positive conclusions, but taken in conjunction with the evidence of authority this study does seem to justify the tentative acceptance of the following views:

1. The slight staining of the nasal discharge with blood, either in subacute or severe nasal diphtheria, would seem to be due to the *severity* of the local disease process. The nasal mucous membrane, highly vascular as it is, bleeds upon very slight provocation.

2. In subacute nasal diphtheria, as in the case of Emanuel K., moderate epistaxis may be dependent upon the *depth* of the inflammatory process. Ulcers were observed upon his nasal septum.

3. The slight or moderate hemorrhages which may occur in more acute cases are probably dependent upon the toxemia. Of course the idiosyncrasy of the individuals plays a part here, just as it does in other infectious diseases (typhoid, scarlet fever, etc.) which may be accompanied by epistaxis.

4. The alarming or even fatal nasal hemorrhages observed in severe diphtheria are always dependent upon the profound toxemia.

Upon *a priori* grounds one would expect to find adenoids playing an important rôle in this connection, but the writer must refrain from expressing an opinion on this phase of the subject, because of the negative value, concerning adenoids, of the testimony here offered.

In a brief concluding summary one may safely assert that:

1. Staining of the nasal discharge with blood is quite commonly seen in nasal diphtheria, and epistaxis of moderate severity is not infrequently observed.

2. Nosebleed is a symptom of much diagnostic value, for it may suggest the possibility of nasal diphtheria in any case, but particularly in the dangerous (to the community) mild case. Among the causes of epistaxis, diphtheria of the nose should be accorded a separate and prominent place.

3. In malignant, mixed, or streptodiphtheria (Northrup) of the nose, epistaxis may be most alarming and may even be the immediate cause of the fatal termination.

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THE CURATIVE EFFECT OF ERYSIPELAS UPON ATROPHIC RHINITIS.[1]

By I. Valentine Levi, A.B., M.D.,
Assistant Visiting Physician to Children's Medical Ward and Assistant Physician to Children's Dispensary, University Hospital; Visiting Pediatrist to Jewish University Hospital; Dermatologist to Union Mission Hospital.

Atrophic rhinitis, although in the ordinary sense not a rare disease, is seldom completely cured, the usual result of treatment being either slight improvement or no change at all. Complete cures from

[1]Read at the Philadelphia County Medical Society, Dec. 23, 1903.

local and general treatment, while they may and have occasionally been obtained, must be exceptional.

A. D. H., male, aged thirty-seven years, married, no children. Patient is very stout and plethoric, uses alcohol and tobacco moderately, is very irregular in his habits, especially as to diet and exercise. He denies ever having syphilis, but confesses having had gonorrhea once. Since being married has been a sexual neurasthenic. Family history is entirely negative. For some time has been suffering from nasal catarrh, but since September, 1902, has had a yellowish discharge from his nose, in addition to numerous dark-brown crusts, both of which were somewhat fetid. He often had a sensation of closure of the nose.

He had been treated by several physicians with absolutely no improvement, and on January 6, 1903, came under my care. Examination at this time showed an atrophic rhinitis. His nares were spacious, the mucous membrane was pale and covered with dark-brown crusts; one large crust, that had become partially detached, extended directly across the nares, obstructing it. This and similar occurrences possibly were the cause of the sensation of closure experienced by the patient. On both sides of the septum anteriorly there was an ulcer of moderate size. A mild degree of ozena was present, in addition to a purulent discharge, which caused the patient to be constantly snuffing and hawking. The sinuses were not involved. The pharynx showed an old chronic catarrhal condition.

The ulcers were cauterized with silver nitrate, the nares well cleaned with the ordinary alkaline washes, and ichthyol 25 per cent was applied. Urine was acid, 1035, contained a trace of albumin, no sugar. Microscopic: urates but no casts, no blood.

Treatment was continued until February 23, with very little improvement. On that day I was called to see the patient, as he had had a chill. His temperature was 104° F., tongue coated, and his nose was a trifle red and swollen. The following day the redness and swelling had increased and spread to both cheeks, giving a butterfly appearance, and a diagnosis of erysipelas was made. Tincture of the chloride of iron, 15 drops every three hours, was ordered, and ichthyol was applied locally. On the fifth day the left cheek began to clear up, but on the right side the erysipelas was spreading toward the ear. The following day the entire right ear was involved, the swelling causing a closure of the external auditory meatus. The tension became very great and caused pain, and fluctuation was present over the tragus. From this time on there was gradual decrease of all symptoms, and in a few days the patient was well. During this illness he remarked to me, on several occasions, that his nose appeared much relieved, and asked me if it was possible that the erysipelas could have had any curative effect on his nasal condition.

The ozena entirely disappeared, the number and size of the crusts diminished, and the ulcers were entirely healed. The mucous membrane, in fair-sized areas, had regained its normal color and appearance.

Treatment for the atrophic rhinitis was resumed on the same lines as before and continued until March 12, 1903, when he had a recurrence of the erysipelas, beginning at the internal canthus of the right eye. This attack was much milder than the first, and was followed by a cessation of the nasal discharge and disappearance of the crusts. The mucous membrane had regained its normal condition save for a few patches.

On March 30 he had a third attack of erysipelas, and when I saw him his nose and right cheek were already involved. This attack was more severe than the first; he had had a chill and was running a temperature of 105° F. The right ear was again attacked.

On April 12 no traces of the atrophic rhinitis remained, but there had been overreaction, the mucous membrane of the nose was red and congested, and there was hypertrophy of the right middle and lower turbinates. The throat still showed evidences of the catarrhal condition, as mentioned before. The present conditions were treated in the usual way, with improvement.

The patient next came under my observation August 28, when he had a small infected wound on his nose, resulting from the opening of a pustule with a needle. This had been very stubborn in healing and is still under treatment (October 21).

A specialist recently saw the case and diagnosed the condition as specific, and put the patient on potassium iodide. It must be borne in mind that during the time he had the atrophic rhinitis he had absolutely had no specific treatment, and if the atrophic condition depended on syphilis, it only adds interest to this case.

Within the last few months his nose has been examined several times and not a vestige of the original condition was found, but in its place there has been present the condition described before—*i.e.*, hypertrophy of the turbinates, etc.

The question will be asked: What was the origin of the primary infection with erysipelas, and why did the patient have two subsequent attacks in succession?

The object of this paper is not merely to report a case of atrophic rhinitis that had been cured, but to put on record a case in which one disease was cured by the intercurrence of another. From the serotherapeutical standpoint this case is of special interest, since erysipelas was one of the diseases concerned. As previously stated, the possible presence of syphilis only adds interest and makes the cure, if the atrophic rhinitis was due to it, all the more remarkable, in the absence of the use of the accepted antisyphilitic remedies. It might be here stated that the patient showed no other symptoms or physical signs of specific disease, with the possible exception of the partial loss of sexual power.

Just why the erysipelas had the effect it did on the atrophic rhinitis I will not attempt to explain, but will merely mention two factors that suggest themselves: (1) The pathology of the two diseases is diametrically opposite: in the one there is anemia and atrophy, in the other hyperemia and swelling. (2) The action of the bacterial products of erysipelas on certain other diseases, as has been demonstrated.

My attention was recently called to the effect of erysipelas on atrophic rhinitis by a paper by Dr. L. S. Somers (*Medical News*, Aug. 29, 1903), who reported a case. Including his case there are, I believe, but three such cases on record, mine making the fourth.

As the scant literature on this condition has been considered in detail in the above mentioned paper, I will not again review it.

VENESECTION AS A THERAPEUTIC MEASURE IN LOBAR PNEUMONIA.

By G. A. Shank, M.D.,
Los Angeles, California.

Quite a good deal has been said in the journals recently of venesection in the treatment of pneumonia. We are wisely, I think, returning to some of the therapeutics of our grandfathers. They did venesection, as we do many things to-day, empirically. In our time of progressive science, by the lights of pathology and bacteriology, from recent studies of toxins and antitoxins, we do venesection in pneumonia scientifically.

When shall we do venesection, and how does it relieve our patients? Some of our more recent text-books say that if we bleed the patient, it should be done within the first forty-eight hours of the disease. I see no reason for venesection at any stated time from the invasion of the disease. A pneumonic patient does not at any time have too much blood, and many of them do not need bleeding at all.

Our pneumonic patients do not die from lack of lung capacity because of hepatization of part of one or both lungs, or from failure of overworked heart in forcing the blood through consolidated lung, but they die from toxemia.

Our treatment should be directed toward assisting the organism to eliminate the toxin, and in producing antitoxin sufficiently to neutralize the toxin produced by the infection. Venesection during the stage of invasion would certainly not help along these lines. The venesection should be done when the patient is being overcome by the toxin, as shown by the rapid and weak state of heart, the rapid, shallow respiration, the anxious face, and the cyanosis, regardless of whether it is the second or eighth day from onset. Simultaneously with the bleeding, we should introduce into the subcutaneous cellular tissues normal saline solution of volume equal to or greater than the amount of blood extracted. By this means you eliminate part of the toxin and dilute that which remains in the organism. The blood-making organs and the nervous system will react, as shown by improvement in respiration and circulation and better facial expression.

This will save a few pneumonic cases which otherwise will end fatally.

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THE HISTORY AND THE VALUE OF THE REST CURE.

It has now become part of our general knowledge that the "rest cure," originally devised by Dr. S. Weir Mitchell, is an exceedingly valuable measure for the purpose of restoring to health those who from various causes are sufferers from exhaustion of the nervous system. At the twentieth anniversary meeting of the Philadelphia Neurological Society, held on January 26, 1904, Dr. S. Weir Mitchell read a paper on the mental processes by which he devised the rest cure, and so put on record for the first time in a formal manner the early history of this valuable procedure. He told the members of the Society that his attention was first called to nervous exhaustion as a separate condition from organic disease when, during the Civil War, Dr. Keen, Dr. Morehouse, and himself studied together the diseases and functional disorders of soldiers who were sent from the front to the great army hospitals of that day. He was impressed at this time by the physical condition of certain of the men who had fallen by the wayside during long and exhaustive marches and when they were suffering from intense nervous excitement, and he not infrequently watched for months these nervous wrecks, which in some instances recovered sufficiently under rest in bed and forced feeding to be able to return to the front, and once more take their place in the line as able soldiers. Again, he had on one occasion the opportunity of observing the effects of a three-months' rest cure enforced upon a case of locomotor ataxia in which a fracture of the thigh had followed a fall. The patient greatly improved in many ways, but on being allowed to leave his bed fell a second time, and fractured the opposite thigh, so that another rest cure of three months more was required. The patient truly "entertained an angel unawares," for at the end of the six months he was much better than before his accidents. Still later there came under his care an overworked woman much emaciated, with complete nervous exhaustion, and disorder of almost every function in her body as a result. She had been to almost every physician of note in this country and Europe without benefit, and remained under his care for a considerable period of time without improving. Remembering the effects of rest, he attempted rest in bed for this patient, but soon found that the results were disastrous in that she was unable to digest her food, and usually vomited all she took. It then occurred to him that if he could provide passive muscular exercises by means of massage and electricity the nervous strength might be saved and nutrition and digestion improved. The result was remarkable.

Although his plan of treatment at first was subjected to adverse criticism, it is now, as is well known, a recognized therapeutic procedure all over the world.

A good motto for every physician is "never to use a drug when a remedial measure other than a drug will do equally well." It is a mistake in many instances to attempt to stimulate an exhausted nervous system by drugs when a rest cure is really needed. On the other hand, it must be remembered that a rest cure is useless unless it is carried out sufficiently long and with sufficient detail to permit it to exercise all its good influences.

THE VALUE OF RELIABLE DRUGS.

At the risk of being reiterative we once more desire to call the attention of our readers to the necessity of employing remedies which are pure and which are surely possessed of physiological and medicinal activity. The physician is the only person who uses drugs at the bedside, and who has impressed upon him day by day the fact that if these drugs are not in every sense first-class, the health or life of his patients may be lost. In many instances the wholesale and retail dealer in drugs, while he knows, in an abstract way, that he is handling substances designed to treat disease, does not have it borne in upon him almost every hour that variations in the purity of the substances which he sells may produce variations as to life or death in those who ultimately purchase his goods.

We have reason to believe that much of the medicine which is placed upon the market is far from possessing the activities which we have a right to expect. In some instances these activities have been destroyed by exposure to dampness or to heat; in others they may have been dissipated by prolonged storage; in still others they may have been injured by worms or insects; and yet again, the soil in which medicinal drugs have been grown may have completely altered the physiological activity and power of the drug. In the case of chemical substances, used as drugs, we all know that they are frequently contaminated by substances which they should not contain; and while, on the one hand, many of these contaminating substances are of chemical rather than clinical importance, on the other hand, in some instances at least, their presence produces an evil influence.

Even if the person who employs a drug by the bedside is so lacking in moral fiber that he fails to recognize the grave responsibility which rests upon him, at least he should be possessed of sufficient business foresight to feel that the employment of feeble or impure drugs is, to speak lightly, a short-sighted policy, for under these circumstances he may have the discredit of losing the patient instead of the credit of saving him; and what is equally harmful, he may have his own professional judgment as to the value of certain standard remedies so warped that he will conclude not to employ a certain drug in another case when the fault really lies in the substance which he has used being incompetent to do the work expected of it because it is weak or impure. Again and again we have known of instances in which the laity have deliberately taken prescriptions to "cut-rate druggists" in order to save five or ten cents, failing to recognize the fact that of all druggists that druggist was in business chiefly for himself, and certainly not for the purpose of making a financial loss. If, therefore, the patient saves, so must the druggist save by buying the cheapest drugs. The difference between first-class and second-class remedies in cost is infinitesimal when the cost of each individual dose is considered, but the variation in the result to the patient and physician may be very great. A reliable physiologically tested remedy may make a reputation and an inert drug may destroy it.

MILK AND INFANT FEEDING.

It is not the purpose of this editorial to go over the various facts which have been brought forward during the past two decades concerning the modification of milk for the feeding of infants who cannot be breast-fed. The literature of this subject has now reached proportions which are truly magnificent, and while many of the contributions have been almost epoch-marking in their character, an immense amount of theoretical discussion has, we think, brought little actual improvement in the nutrition of bottle-fed babies.

Scarcely any physician who has kept abreast of the literature of his profession does not know something of the needful modifications for the purpose of making cow's milk digestible for infants. In some instances the physician is so careful that he insists upon an analysis of the milk, and then upon, what might be called, chemical accuracy in its modification. Other physicians of large clinical experience are content to utilize the scientific facts which have been adduced as to the methods of modification in what might be called an approximate method, and it is probable that the vast majority of physicians in active practice approximate the quantities of

cream, milk, sugar of milk, and other ingredients of the baby's bottle rather than insist upon an accurate, unvarying mixture. It cannot be denied that certain cases do best when the greatest possible care is utilized in the modification of the food, but the vast majority of children do well on the approximately adjusted bottles.

A very much more important question for the consideration of the active practitioner is that which deals with the purity of the milk which is given to his patient. Even in country districts there can be no doubt that much of the milk is contaminated by microörganisms and by dirt, for the existence of which there is no excuse. In cities the opportunities for contamination in the process of transportation and storing of the milk and because of the foul condition of the atmosphere are exceedingly great, and in the poorer districts of great cities it is a well known fact that the mortality among young children who are bottle-fed is truly fearful to contemplate. We have read with great interest in the *Medical News* a very useful laboratory and clinical report made by Park and Holt in regard to the milk supply of certain portions of New York City, the effect of Pasteurization and sterilization upon such milk, and the consideration of the relationship between illness and death and the employment of milk containing a certain number of bacteria. They found that certain samples of milk contained exceedingly large numbers of bacteria. Quite a number of children were taking milk which contained as high as 350,000,000 bacteria to the cubic centimeter (15 drops), and yet many of these children manifested no gastrointestinal disturbances. It is a noteworthy fact, however, that these children were over three years of age.

Another very interesting fact elicited by their research is that during cool weather neither the mortality nor the health of the infants who were studied was appreciably affected by the kind of milk or by the number of bacteria which it contained. Far fewer microörganisms were found in the milk during the winter than during the summer. In hot weather, on the other hand, when the resistance of the children was lowered, the kind of milk taken greatly influenced the amount of illness and death, and it was found that those who took condensed milk and cheap store milk did the worst, and those who received breast milk, pure bottled milk, and modified milk did the best. It was also found that the effect of bacteria was very marked when the milk was taken without previous heating, and only slight when the milk was heated. After the first two months of life these observers found that infants were less and less affected by the bacteria in milk derived from healthy cattle. They strongly advise that milk used for infants should be delivered in sealed bottles, and that only the purest milk should be taken raw, especially in summer; and finally, it is noteworthy that they find that close percentage modification of milk, although desirable in difficult cases, is not necessary to obtain excellent results with the great majority of infants, and that the adjustment of a healthy infant to its food is usually soon secured.

THE VALUE OF MUSK.

Although it is not many years since certain practitioners were wont to employ musk quite constantly in the treatment of disease, there can be no doubt that at the present time it is rarely used, and that the younger generation of practitioners has never seen it employed. Several causes are responsible for this decrease in its popularity. In the first place, it is exceedingly difficult to obtain pure musk, and as adulterated musk is often substituted, the therapeutic results which have followed its employment have been disappointing. Again, the price of pure musk is so great that some hesitancy is felt in ordering a drug of uncertain therapeutic value when the cost of the substance ranges as high as twenty-five dollars a drachm, particularly when the dose is five grains every two hours, according to Dr. Crookshank, of London. Again, there are, so far as we know, no pharmacological studies which indicate that musk has any distinct physiological action in the ordinary sense of that word, although the older physicians were in the habit of considering it a valuable diffusible stimulant in cases of nervous and circulatory depression.

Our attention has once more been called to this drug by Dr. Crookshank's paper in

the *West London Medical Journal* for January, 1904, in which he tells us of a case of a young man of nineteen, who was suffering from severe toxemia in scarlet fever, from intense insomnia, mental agitation, and finally, from a raging delirium which continued until the fifth day, when the maniacal excitement gave way to muttering delirium, and the urine and feces were passed involuntarily. Cheyne-Stokes respirations came on, and every form of stimulant was used without avail. At this time some pure musk was obtained and given in the dose of four to six grains every two hours, when to the astonishment of every one the patient began to rapidly improve, and at the end of forty-eight hours was obviously better. Recovery finally took place.

THE AFTER-TREATMENT OF PATIENTS SUFFERING FROM SURGICAL TUBERCULOSIS.

That the patient suffering from a local, accessible, and removable tuberculous infection should, after radical operative treatment, be subject to a course designed to protect him from a tuberculous outbreak elsewhere is a proposition readily accepted when formulated, but one often neglected because the surgeon's attention is concentrated upon wound healing that the article by Knopf (*Annals of Gynecology and Pediatry,* No. 12, 1903), on this subject, is both timely and appropriate. It is true perhaps that the major factor in a permanent cure is a complete removal of the focus of infection. The importance of this is shown by the after-course of cases of bone and joint tuberculosis, which, apparently healing under conservative treatment, break out afresh, consequent on insignificant trauma years later. The tubercle bacilli or their spores have an extraordinary power of latent vitality, and the person who has once exhibited a local infection, particularly if this has not been removed, should be regarded as being in the same danger, and should be subject to a treatment similar to that applicable to cases of pulmonary involvement.

Since we have no specific medication against tuberculosis, our main dependence in combating it must be placed in measures which have for their end the increasing of cell vitality and resistance. These measures imply an abundance of sunlight and fresh air, exercise, either passive or active, hydrotherapy, and particularly, because tuberculosis is especially characterized by rapid tissue destruction, easily digested, highly nutritious food in as great quantity as can be taken by the patient.

Thus, after such an operation as celiotomy for the relief of tuberculous peritonitis, the patient, well protected against draughts or colds, should be put in the sunlight, as soon as the effects of ether and the immediate shock of operation have passed off. If this be impracticable, the room should be well ventilated and kept at a temperature of about 60° F. Bathing and light massage should be instituted from the first, sparing of course the abdomen, and as soon as the bowels have been opened and the stomach is retentive forced feeding should be begun, with peptonoids, expressed beef juice, eggs, milk, cream, supplementing the ordinary postoperative dietary. Such patients should be put in a wheel-chair within the week, and, sheltered against wind and the direct rays of the sun on their heads, should be treated in the open through the entire day. In addition, Knopf strongly urges the importance of respiratory exercises, pointing out that while 500 cubic centimeters represents the tidal air, the amount that can be inspired after an ordinary breathing in is three times this much, and the amount that can be expired after an ordinary breathing out is nearly as great. Deep inspiration and forced expiration, in addition to changing the residual air and providing a useful form of exercise, bring an added amount of oxygen to the blood and thus increase metabolism. As convalescence becomes definitely established, in addition to a more vigorous and general massage and more frequently repeated deep breathings, the patient is given a course of exercise adapted to his strength.

Finally, on restoration to health patients who have suffered from surgical tuberculosis should be warned that they are susceptible to a recurrent infection, either local or general, and should, where possible, select a climate and vocation best suited to keep them in perfect health. It is advisable for such patients to per-

sistently practice hypernutrition, and to guard against trauma, grippe, or other causes of local or general depressed vitality, which are frequently the forerunners of a further outbreak of tuberculosis. In regard to prescribing exercises for tuberculous patients, Knopf justly insists that when fever is present the major indication, aside from nutrition, is rest.

HYPERTROPHIC STENOSIS OF THE PYLORUS IN INFANTS.

This affection, of obscure etiology, dependent upon a true overgrowth of the pyloric muscle, is characterized by symptoms so constant as to make its recognition possible and its treatment by surgical measures not only justifiable, but in cases not yielding to dietetic and medicinal treatment, obligatory. Mackay (*Intercolonial Medical Journal of Australasia*, Nov. 20, 1903) notes that the symptoms begin with forceful, causeless, and persistent vomiting, recurring at irregular intervals, associated with constant hunger. The amount vomited is as great as that taken in two or three feedings. Gastric catarrh, characterized by the eructation of large quantities of mucus, shortly develops. Constipation becomes marked, and there is progressive emaciation. Ultimately the stomach dilates, forming a conspicuous bulging in the upper zone, and where emaciation is marked peristaltic waves are plainly visible. In brief the symptoms are typically those of pyloric obstruction, such as would in an adult suggest the diagnosis of cancer or cicatrized ulcer.

The prognosis is by no means hopeless, even under medicinal and hygienic treatment, Saunders having thus cured four out of five cases. The secondary gastric catarrh should be treated by lavage and stomach rest, food being administered by the rectum. The diet should be such as to form no coagulum in the stomach, hence mother's milk is not suitable, though the milk of a wet-nurse in advanced lactation may answer. Whey with cod-liver oil or cream may be retained, and predigested milk should be given a trial in every case. Belladonna, bromide, and chloral, as antispasmodics, have been recommended.

When, in spite of lavage, rectal feeding, and careful diet, the child is steadily failing, operation is indicated. Pyloroplasty is the method of choice. Mackay lost a case after this operation because the redundant mucous membrane entirely occluded the pyloric orifice, even though the muscle had been cut, and the wound had been united at right angles to its long axis. Cautley and Dent report successes in very bad cases; they, however, removed the redundant fold of mucous membrane at the entrance to the pylorus.

Reports on Therapeutic Progress

INFLAMMATIONS OF THE IRIS.

In the *Birmingham Medical Review* for November, 1903, OWEN in a somewhat exhaustive paper on this subject reminds us that heat and cold are useful in relieving pain and reducing inflammation. Of the two, heat is by far the more valuable; only in the early stages of iritis is cold likely to be advantageous, whilst moist heat in any stage is advantageous.

Heat is best applied in the form of pads soaked in hot water or in some sedative solution. Conium and belladonna fomentations are most useful. These applications are best made in the following manner: Pads, circular in shape, composed of six or eight thicknesses of lint covered with oiled silk, should be dipped in the hot solution, wrung out, and placed over the eye as hot as they can be borne, then covered with dry cotton-wool. As soon as one pad is beginning to cool, it should be replaced by another taken from the hot solution; these hot applications should be kept up for a couple of hours or so, and when they are removed the eye should be covered with a mass of heated, dry cotton-wool in their place.

Leeching is a method formerly greatly employed, but not so much used at present. It cannot be regarded as a remedy, but only as a temporary means of assisting the action of other remedies; for the empty blood-vessels are always subject to reëngorgement, and the condition after leeching is soon the same as before. But abstraction of blood has this advantage: when pain or congestion is excessive, or when the pupil refuses—due to overengorgement of the vessels of the iris—to

respond to the use of the mydriatic, the temporary anemia induced by bleeding is advantageous. When leeching is found advisable, it is better to apply three or four natural leeches at once, or to abstract rapidly an ounce or more of blood by the artificial leech, rather than to put on a leech, and then after an interval of a day or two another leech, and so on. The local shock and sudden abstraction of blood are the valuable points to be gained.

Counter-irritation used to be applied with vigor in the acute stages of the disease. It is useless and worse, for it increases the patient's misery.

The pain in iritis calls for special treatment. It is, as a rule, so much worse at night that unless some composing drug is given the patient is worn out by the unceasing pain. Opium in one form or other is most valuable. Great relief is obtained also from antipyrin and phenacetine. Chloral and bromide of potassium, alone or together, are useful for night draughts. A good deal of advantage is gained by free sweating. This may be induced either by hot air or vapor baths, or by the subcutaneous injection of a tenth to a third of a grain of nitrate of pilocarpine.

It need hardly be said that from the first the patient suffering from iritis should be kept at rest; the eyes should be shaded from light and kept more or less constantly covered. It is well, if opportunity allow, to begin the treatment of iritis by a brisk purgative, and when the effect of this is over, let the cause of the disease be what it may, mercury is invaluable in the early stages. It may be given as small doses of calomel combined with opium every few hours, until the first evidences of constitutional effect are manifest. By this means exudation is controlled, and any adhesions which may have formed stand a chance of being removed by absorption of the freshly exuded matter.

This stage in the treatment being reached, any specific remedy indicated by the cause of the disease may be employed. In syphilitic cases mercury should be continued; it is the remedy of all others. Whether small doses should be continued by the mouth, or whether inunction should be used, or any other form of exhibition, is greatly a matter of opinion. The more acute the case, the greater the need for rapid saturation of the blood by mercury, and small doses of calomel given as above indicated form the best means. In later stages inunction is valuable. The author has never tried hypodermic injections of mercury, though it is said to be the most rapid means of obtaining the physiological effect of the drug. In the later stages the perchloride of mercury has great advantages, especially when combined with the iodide of potassium.

In rheumatic iritis the salicylate of soda in 15-grain doses every three or four hours is an admirable remedy, the benefit of which is specially marked in the painful stages—in fact, it does not matter what may be the origin of iritis, this remedy seldom fails to be of use. In the most painful stages of some cases of rheumatic iritis, benefit is obtained from quinine combined with gelsemium or opium. And especially is this true in cases of iritis occurring in patients who have been the subjects of malarial disease. Aspirin is also of value.

In this form of iritis, and in the gonorrheal form, alkalies, particularly the iodide and bicarbonate of potash, and large doses of the benzoate of soda, combined with quinine or tincture of cinchona, are most useful.

Where a gouty element seems to prevail, alkalies with colchicum act like a specific. In cases of iritis occurring in diabetes, salicylate of soda is useful. In tuberculous iritis, quinine, iron, and arsenic, with cod-liver oil, and careful hygiene, should be employed.

A NOTE ON THE THERAPEUTIC VALUE OF MUSK.

This somewhat old-fashioned remedy is commended by CROOKSHANK in the issue of the *West London Medical Journal* for January, 1904. It appears from considerable experience that musk is of benefit, not in every severe case of acute specific infection, but when the symptoms are chiefly due to the intense action of toxins on the central nervous system and when death appears likely from the destruction of the functions of the medulla oblongata. It is of no use to give musk, as it has been known to be given, in typhoid fever with perforation, hemorrhage, or pneumonia; it is of little use in the septic kinds of scarlet fever; and it is not called

for in diphtheria when antitoxin has failed to abate the local spread of the disease; but the writer believes it to be an unrivaled drug in pure cases of acute specific toxemia with especial incidence of the poison on the central nervous system.

The author has on several occasions seen remarkable results from the use of musk in other cases—those in which there are aberrations of the nervous control of the vasomotor system.

Musk is said to be "the dried secretion from the preputial follicle of *Moschus moschiferus,*" and is described as occurring in "irregular brownish grains contained in an oval sac about two inches in diameter, smooth on one side, and covered on the other, outer side, with bristle-like hairs arranged concentrically around a central orifice." *Moschus moschiferus* is the true, or Chinese, musk-deer, and is found only in Central Asia.

The "oval sacs" commercially known as "pods" are, we are told, the preputial folds as removed by native hunters. These pods arrive in England through the Chinese trade, packed by twenties in carved wooden "caddies." On account of their considerable value the pods are entrusted by the firms to which they are consigned or sold to responsible persons for preparation, and these persons have to account very strictly for the quantity given them. The pods are opened with fine scissors, and the large grains are shaken out and carefully collected. These large grains represent the highest grade of musk. Next, the pods are stretched out and carefully scraped with a fine knife. These scrapings constitute the second grade of commercial musk. Lastly, the pods themselves are finely chopped or minced, providing thus the third grade of musk, used we are told by the perfumers in "fixing" perfumes.

On account of the high commercial value ($25 a drachm) of the best musk, there is obviously great temptation for the sale, in substitution, of the second and third grades.

It is the best musk only that should be used therapeutically. It must be given in adequate doses (5 grains every two hours is not too much), for the effect is transitory, owing, it is supposed, to the rapid destruction or physiological neutralization in the body of the active principle.

It is difficult to explain the therapeutic value of musk, but one may suppose that the volatile aromatic substance, which, although of unknown chemical constitution, is believed to be the active principle, has, when conveyed by the blood stream, an action on the nerve cells of the lower brain, either directly stimulant or else antagonistic to the products of the specific microbes; or it may be that the active principle of musk has some power of directly fixing or rendering inert bacterial toxins—that it is, in fact, a natural and non-specific antitoxin.

If musk is to be usefully employed it should be given only in the class of cases indicated, and must be of the finest quality; it must be given at frequent intervals, and by a hand that is not niggardly in either a therapeutic or financial sense.

THE ACTION OF STRYCHNINE IN POLYURIA AND IN DIABETES INSIPIDUS.

L. Feilchenfeld (*Deutsche medicinische Wochenschrift,* July 30, 1903) had occasion to treat an old gentleman who was suffering from polyuria and complete paralysis of the bladder, due to overdistention and slight hypertrophy of the prostate. After prolonged treatment with catheterization, washing out the bladder, etc., little or no improvement was gained. The amount of urine measured over three liters, and the specific gravity varied between 1010 and 1012. Feilchenfeld then tried the effect of strychnine nitrate for the paralysis of the bladder. He started with a single injection of 0.0025 gramme (about 1/25 grain); although no appreciable effect could be noted on the bladder, the amount of urine was considerably diminished on the following day. He continued the strychnine, giving a daily injection, which he eventually increased up to 0.01 gramme (about 1/6 grain), and on the fifth day the amount had decreased to 1400 cubic centimeters. The thirst was lessened, and the dryness of the tongue diminished.

He next tried the strychnine on a case of diabetes insipidus in a woman aged fifty-two. The amount of urine daily was about 4000 cubic centimeters, and it had a specific gravity of 1002. He started the treatment with injections of 0.005 gramme (about 1/12 grain). On the eighth day

she was passing 2500 cubic centimeters, and the thirst, dryness, and other symptoms lessened, and she gained in strength. The specific gravity, however, had not altered. That the strychnine acted directly on the central nervous system, and not on the vessels in the kidney, is shown by this maintained low specific gravity. He regards the results as important enough to justify further observation, and possibly trial in cases of diabetes mellitus with polyuria.—*British Medical Journal,* Nov. 28, 1903.

ALCOHOL IN TROPICAL CLIMATES.

Major FRIBIG, who has served in the Dutch East Indies since 1879 as an army surgeon, is the author of a paper on the influence of alcohol on Europeans in the tropics which was read recently at Aix-la-Chapelle. Acclimatization, he says, is the result of a new regulation of the course of the blood by the vasomotor system. The use of alcohol in a hot climate weakens that system and consequently interferes with the acclimature. Up to 1898 every Dutch soldier serving in the tropics used to receive 100 cubic centimeters of wine daily as part of his ration, but in May of that year General van Heutsz, governor of Atjeh, reduced the allowance by one-half, and, moreover, permitted the men who were so inclined to draw its value in money instead of the liquor. The officers, whose daily allowance was half a bottle of red wine per head, were also given a similar choice. From that moment, continues Major Fribig, the soldiers, stimulated by the example of their officers, became total abstainers in large numbers and exhibited a power of resistance against disease and fatigue, as well as an obedience to discipline, such as never before had been seen during any of the wars and expeditions which had occurred in Dutch India. The sick rate at once began to fall, a remarkable diminution being observable even with the first three months.

Major Fribig, who has been a total abstainer since 1894, used formerly to indulge in siestas, but never does so now. The midday heat has no injurious effect on him, and he is able to work during the afternoon with as clear a brain as in the morning. While he was a consumer of alcohol exercise under the sun's rays used to exhaust him very quickly, leaving him bathed in sweat and completely worn out. Now he can support the hardest outdoor work without blanching; although forty-six years old he lately took part in an arduous expedition, and was able to perform the longest and most toilsome marches with comparative ease. It was the same with the other abstainers, but all who adhered to their wine suffered severely, and in many cases broke down altogether. Major Fribig knows a great number of officers and men who continue to consume alcohol, but are nevertheless able to carry out their duties efficiently in time of peace. They are therefore looked upon as fit for active service, but no sooner are they put to the test of hard work than they succumb. Their vascular systems are unable to withstand the extra strain; weakness or paralysis of the heart renders most of them absolutely unfit for duty. Many victims of the alcohol habit become moral wrecks, losing all energy and initiative. Suicides amongst the troops in Dutch India are invariably consumers of alcohol. Among the diseases which Major Fribig found far more virulent and fatal in non-abstainers than in abstainers are palustral fevers, hematuria, cholera, dysentery, cirrhosis of the liver, neurasthenia, cephalalgia, syphilis, and surgical injuries.—*Lancet,* Nov. 28, 1903.

THE TREATMENT OF NEPHRITIS.

Editorially the *British Medical Journal* of November 28, 1903, gives the following as Professor von Noorden's criteria in the treatment of renal disease. They are three. First, there is the general condition of the patient as shown by the clinical course of the malady. Secondly, there is the amount of albumin, which is a valuable sign in acute nephritis, but extremely variable in the subacute and chronic forms. It has, indeed, been shown that the amount of albumin often increases when the diet is suddenly altered in the direction of either latitude or greater stringency. The third test is the amount of metabolic products excreted, which is not to be gauged by the tests made with potassium iodide or other similar methods. The fundamental method of treatment must be to protect the kidney

while avoiding injury to other organs. It is essential, therefore, not to give substances which are excreted with great difficulty by a diseased kidney. Among these, Professor von Noorden refers particularly to urea, kreatinin, pigments, hippuric acid, phosphates, inorganic sulphates, and water. With regard to the pigments, his account is hardly in accordance with modern physiological views; thus he believes that the chief of these bodies found in the urine are urobilin and hematoporphyrin. In order to avoid the ill effects of phosphoric acid he recommends that calcium carbonate be added to substances containing it.

One of his strongest and most original points is his attack upon the milk diet which is so commonly prescribed in renal disease. He holds that milk contains on the whole too much proteid, and he recommends that it should be restricted to three pints a day, to which a pint of sterilized cream should be added. At the same time too much fat must not be given, as it simply loads the system; later on he allows the amount of milk to be increased as the excretory power becomes greater. In order to avoid the production and accumulation of hippuric acid, he recommends that substances containing benzoic acid and its derivatives should be avoided; contrary however to popular opinion, he regards vinegar as being harmless, and states that the same applies to uric acid and its bases since they are not retained in cases of nephritis. With regard to water, he is for giving as little as possible in acute nephritis with edema, for fear of overloading the circulation; at the same time he considers that diaphoresis is only indicated when diuresis is deficient.

Coming to the special treatment of the varieties of nephritis, Professor von Noorden recommends that in the acute form, when there is oliguria and edema with threatened uremia, the amount of fluid administered should be restricted to a minimum, such as a pint of milk a day; in this stage he holds that a little alcohol may be desirable to whip up a failing heart. In our opinion this view is hardly warranted, as the introduction of so intense a renal irritant into the circulation cannot fail to increase the damage which is being done to the kidney epithelium. It is as a rule far better to substitute other methods, to which no reference is made in his book, such as venesection and the use of preparations containing ammonia, particularly the carbonate. In less acute cases Professor von Noorden recommends a simple menu consisting of 3 pints of milk, ¾ of a pint of cream, 1½ ounces each of rice, rusk, and butter, and 2/3 ounce of sugar per day; such a dietary gives 2900 calories when consumed. The amount of water to be permitted in addition to the milk is to be regulated entirely by the capacity of the kidney for excreting it. If this is great an abundance of liquids may be allowed; if it is deficient, they must be restricted. In the granular kidney attention is first called to the importance of distracting the patient's attention from the condition of his urine, particularly with regard to that variable factor the amount of albumin. It is pointed out that, as has long been known, pronounced retention of urea and such like products, especially late in the disease, is a very bad sign.

With regard to the administration of alcohol, Professor von Noorden is inclined to be more restrictive here than in acute nephritis, seeing that the patient is not, as in the latter disease, under continuous medical control. He holds that alcohol should only be permitted as a drug, the indications being loss of appetite and cardiac disturbance. As the results of various investigations, he condemns radishes, but permits asparagus, while he finds that celery is sometimes harmful and sometimes innocuous. Whether conclusions on these points, based upon the examination of the urine as regards albumin and casts, are of final clinical value is, however, a point which has yet to be decided. Coffee, tea, and tobacco are condemned as being injurious to the heart.

With regard to the question of red and white meats, Professor von Noorden is distinctly inclined to remove the embargo upon the former, holding that it has not been shown that they really contain more extractives than the latter, though he hardly seems to realize the fact that on his own showing they ought to be condemned as containing more pigment. In one respect he is undoubtedly quite correct, and that is that the comfort of the patient is greatly enhanced by permission to vary

his diet by an occasional meal of dark meat. The extreme lower limit of proteid which should be allowed is three ounces; if less than this is taken, the patient becomes weak and fat, and is liable to cardiac degeneration. The author enforces restriction of the amount of water taken to two and a half pints a day as a maximum, asserting that greater quantities throw an increased strain upon the heart and circulation; and he holds to this rule even in cases complicated by gout. One serious complication which must be strenuously avoided is obesity, but at the same time it is of great importance not to reduce the weight violently. In moderately severe cases baths containing carbonic acid are recommended, and steady muscular exercise is allowed until the last stage is reached.

THE TREATMENT OF CANCER BY CAUSTIC PASTE.

The *Medical Record* of December 12, 1903, contains an article on this subject by C. W. ALLEN. In looking over his statistics of epithelioma treated before the days of the *x*-rays, and comparing the results with those following *x*-ray treatment, the author was struck with the little difference to be discovered. Comparing fifty cases treated by pastes alone with fifty patients who had the benefit of the *x*-ray in addition, or as the sole method employed, the final results, number of recurrences, etc., were almost identical. His table of the exact figures is in the printers' hands, but will soon appear in book form.

Since the above was written, the author has found on page 127 of the last volume of "Progressive Medicine" a quotation from some of his own writings in Dr. Gottheil's really excellent review of dermatology and syphilis, as follows: "Allen's conclusions represent the position that seems rational, and as they summarize our present knowledge upon the subject, I repeat them:

"1. Cutaneous cancer is traceable in almost all cases to preceding local irritation.

"2. There may be other causes, but infection is probably a source of the disease.

"3. Benign epitheliomatous proliferation may be infectious.

"4. Cancer is curable, but if the disease is allowed to progress the patient may not be.

"5. Only the most radical treatment is to be tolerated.

"6. Caustic paste, with subsequent caustic dressing, is radical, and is often preferable to the knife.

"7. The earlier cancer is treated the less likelihood is there of relapses or metastases.

"8. The *x*-ray bids fair to be as effective as caustics."

With this added strong authority for the use of caustics it would seem that writers should refrain from referring to the method as one leaning toward charlatanism.

THE PRESENT POSITION OF ETHYL CHLORIDE.

In a letter addresed to the London *Lancet* of November 8, 1903, LUKE expresses his views once more as follows: (1) Ethyl chloride is a pleasant anesthetic to inhale, extremely rapid in action, very portable and inexpensive. (2) It compares favorably with nitrous oxide as regards induction of anesthesia and available period: it produces no cyanosis, when used in suitable doses, and necessitates the carrying of no heavy and cumbersome impedimenta. The advantage of this to the general practitioner and dentist in the country is obvious. (3) The technique of the administration is very simple. (4) While not as safe as nitrous oxide in the hands of the unskilled, we are justified in concluding from the material available that it is safer than ether, all things considered, and much safer than $CHCl_3$, or bromide of ethyl. (5) It can be safely readministered at one sitting, this being a further point in its favor over bromethyl. (6) It is not usually followed by marked after-effects. (7) It is preferable to nitrous oxide when the patient is very young, very old, or anemic, while those who are suffering from cardiac, renal, or lung affections take it quite well. (8) It is in no way to be preferred to $CHCl_3$ or ether for prolonged anesthesia, but may be used with advantage merely to induce anesthesia which is maintained either with $CHCl_3$ or ether. (9) For minor surgery, throat operations, and the extraction of teeth it is the best anesthetic available at the present time.

(10) Pure ethyl chloride, sold as such, is always preferable to proprietary preparations and to mixtures. (11) In conclusion, one of the strongest claims of ethyl chloride to being considered a fairly safe anesthetic lies in the fact that during the past twelve months it has been experimented with wholesale throughout the country, and yet no death has been recorded. It is quite possible that we may hear of one or two from time to time now as the anesthetic becomes more widely used, and often by quite unskilled and inexperienced persons, but that should not blind us to the real merits of the drug when used with reasonable precautions.

THE TREATMENT OF LOBAR PNEUMONIA.

In the course of a paper on this subject by BUTLER, which is abstracted in the *Medical News* of December 12, 1903, he expresses the belief that cardiac weakness is perhaps the main source of danger in pneumonia. Circulatory impairment in the early stage of the disease is in all probability due for the most part to the depressing effect of the toxemia on the central vasomotor apparatus; in the later stages and during convalescence, to acute myocardial disease. Strychnine, the muscle energizer and central vasomotor stimulant, is a remedy of the first value. One-fortieth or one-twentieth grain, or even more, should be given every two hours, and it should be administered hypodermically if prompt action is desired, or if there is the least doubt as to its absorption by the stomach. Next to strychnine is caffeine, either in the form of the citrate, or better, as strong black coffee—one to two ounces every two to four hours. Brandy, whiskey, the stronger wines, camphor, and aromatic spirit of ammonia are useful adjuvants; digitalis, nitroglycerin, strophanthus, and sparteine may be given in full doses. An occasional dose of atropine and quinine bisulphate hypodermically is of service, and the rectal administration of strong coffee with whiskey, or an emulsion containing 30 grains of musk may be called for in urgent cases. The possible usefulness of the powdered suprarenal, or its active principle adrenalin, should also be borne in mind. Swathing the thorax in flannel wrung out of hot mustard water is often advantageous. The use of morphine in small doses (1/30 to 1/15 grain, repeated or increased according to circumstances) will accomplish results obtained by no other drug, quieting and soothing the patient and steadying and improving the action of the heart. Especially if constipation, flatulence, or edema be present, calomel and compound jalap powder, in full dose, may act very happily, or some saline may be substituted. The subcutaneous administration of a pint or two of normal salt solution is a resource not to be neglected in grave cases.

Pulmonary edema demands repeated dry cupping, hot mustard fomentations, calomel and jalap, large doses of nitroglycerin, moderate doses of atropine, and the free use of oxygen. The judicious physician will constantly endeavor to carry through the individual case with watchful expectancy, the least possible of meddlesome therapeutics, and the careful observation of the patient's strength. While, however, giving as little active treatment as the case will allow, he will not hesitate to employ the most active and vigorous treatment when it seems indicated, making use of every measure which clinical experience has proved to be of value, though even slight.

In discussing Butler's paper Dr. A. A. Smith said he was thoroughly in accord with most of the views advanced. His experience with creosote, however, was of a character contrary to that of Dr. Butler. In his hands it had proved of no benefit whatever, with the exception of cases where the disease was confined to one lobe and there was a general bronchitis present. He had also found it useful, in small doses, in tympanites. Neither could he indorse the use of quinine, except it might be on account of the presence of special conditions, and stated his conviction that in the large doses in which it was formerly given the depressing effect of the drug had sometimes led to fatal results. Like Dr. Butler, he advocated the use of oxygen, and said that he had often seen good results from it where there were cyanosis, pulmonary edema, etc. There appeared to him to be certain objections to the mitten rub. These were purely clinical, such as disturbance to the patient. For the application of either cold

or heat he preferred the use of flannel wrung out of water and constituting a compress. To serve the best purpose it was necessary that it should be applied to a large surface of the body, and he believed that this measure was a valuable respiratory and circulatory stimulant, and, above all, a marked nervous sedative. Recently he had obtained good results by keeping the flannels at a temperature of 90° F.

Personally he is a firm believer in the very pronounced influence of the nervous system in producing cardiac weakness, and he thinks it is through this that we can best afford support to the heart. It is through the agency of the nervous system that strychnine is so beneficial. Alcohol is apt to be given too early and too freely. It should be administered in moderate quantities, and in the majority of instances is not required at all. It is of great value, however, in cases occurring in chronic alcoholics, and here it should be begun very early, as the active delirium apt to to be met with in such cases has a most disastrous effect upon the nervous system. Nitroglycerin is a great aid to other remedies, such as strychnine and caffeine, and is absolutely safe.

Dr. George L. Peabody thought the treatment might be divided into (1) an intelligent symptomatic treatment, and (2) an attempt at a specific or definite treatment. As to the first, delirium seemed to him one of the most troublesome and grave symptoms, and in his experience delirium with high fever could not be well treated by means of drugs. These are greatly inferior to hydrotherapy, and although Dr. Butler considers it unjustifiable to put a pneumonia patient in the tub, he believes that he has convinced several generations of hospital internes that the cold bath, precisely as used in typhoid fever, is the best treatment for raving alcoholics with high temperature. If this method seems too heroic (the patient being very feeble), or if there is delirium without sufficient fever to justify the cold bath, he is accustomed to use the cold pack, for which he thinks linen greatly superior to woolen or cotton. In speaking of specific treatment he quite agreed with Dr. Butler as to the necessity of a very large number of cases in order to arrive at any definite conclusions. He would only give his experience with a limited number for what it is worth. He has been favorably impressed with the salicylates. Aspirin is an excellent way of giving salicylic acid. Under its use patients appear to stand the disease better than otherwise. Crisis is uncommon; lysis the rule. During February, March, and April, 1903, he treated forty-three cases with creosote carbonate. In these lysis was noted in 48 per cent, and crisis in 21 per cent. Thirteen patients, or 30 per cent, died. He is not yet convinced that we have any specific for pneumonia. At present he considers it the best plan to employ an intelligent symptomatic treatment, in addition to the administration of one of the so-called specifics.

Dr. Herbert F. Williams said there is one measure which, when properly used, outweighs everything else in importance. By venesection the overburdened heart is relieved, the blood robbed of an appreciable quantity of exudation product, and the pneumonic process thereby limited. It is most apt to be called for in the robust and well-to-do, whose fund of health seems contributory to the intensity of their pneumonia. The statistics of our fathers in the treatment of such cases, he thinks, would not suffer in comparison with those of their sons. In lesser pneumonias, even lobar, pain is often an early and obstinate symptom, and can be relieved better by other means than opiates. The seat of the pain is in the pleuræ, and by a unique anatomical and physiological association of the cutaneous, intercostal, and visceral nerves we can influence the circulatory condition in the pleuræ by directing the current toward the surface. This is the rationale of the law of counter-irritation, and as applied to pneumonia it cannot be better secured than by wet-cupping directly over the inflamed point. The contingent effect of the immediate relief from pain thus afforded may be more radical upon the pneumonic process than one would lightly suppose; for the relief of pain permits a full inspiration. He has often seen a bronchial respiration thus reduced to bronchovesicular, and believes that wet-cupping is not only a safe but a mandatory procedure in early pneumonia.

TREATMENT IN 442 CASES OF MOVABLE KIDNEY WITHOUT SURGICAL INTERVENTION.

To the issue of *American Medicine* of December 5, 1903, AARON gives his experience as outlined in the above title. He believes the main treatment for movable kidney is to support the dislocated organ, and along with it such other abdominal organs as are displaced, and to maintain them in their normal position as near as possible. This is usually accomplished by means of special bands. These should be constructed for each patient out of stiff material, and should fit accurately. There is no one band that will fit all patients. If the intestines are in position, care must be taken that the band does not press upon these organs, as a great deal of harm may be done in this way. It is a good plan to inflate the colon with air and then map out carefully the transverse colon, as this is apt to be prolapsed. The position of the stomach must be made out accurately. It is necessary to know the position of both spleen and liver. The author takes a model of the abdomen with a piece of pliable lead so as to get the exact shape of the patient just at the lower edge of the displaced kidney. It is here that the greatest pressure must come. There should be no pressure directly upon the kidney itself. With a band fitting properly just under the displaced kidney, it will be supported and held in its normal position. Every band should be made so that there is a uniform pressure over the whole lower part of the abdomen. The pads must be so arranged that they push each displaced organ from below upward and backward. All pressure upon the upper abdominal region should be avoided. After the proper fitting of a band an examination of the stomach contents will decide the best dietetic and medicinal method of treatment.

Ready-made abdominal bands for holding the kidney and other organs in position are usually failures. The physicians send their patients for a band to an instrument-maker who has not the slightest conception of the result which should be obtained. It does not make much difference to the instrument-maker whether the kidney is displaced at the level of the umbilicus, or whether the kidney is as far down as the brim of the pelvis. It does not make any difference whether the stomach is partially prolapsed, or whether part of the intestine is prolapsed. The patient is sent for a band, and a band is sold. At the end of a few days the patients say that they cannot wear such an apparatus on account of the discomfort. The pressure may be upon some weak point, which causes a great deal of pain. Many times patients are sent by their physician to the surgeon for an operation without much more consideration. It has been found that between 90 and 95 per cent of these patients can be cured by the fitting of a proper support, and it devolves upon the physician to see that a proper band to hold the organs in position is made.

It is not an easy matter to fit a band to patients having ptosis of the abdominal viscera. The author has had as many as five different bands made for one single patient before a satisfactory one was obtained. Every case demands special study and careful consideration. The author maps out the position of the kidney, liver, spleen, stomach, and inflates the colon with air, so as to be sure that there is not a coloptosis. When fitting a band the pads must be so arranged as to hold up all the different organs which are displaced, at the same time exercising equal pressure over the entire abdomen.

Operations for movable kidney have not given good results, while the wearing of bands properly fitted gives the best results. Before deciding to operate for movable kidney, the surgeon must consider that the downward displacement of the other abdominal organs is apt to be present. When we have a movable kidney, we may also find a displaced stomach, small intestine, colon, sigmoid, liver, or spleen. These may be displaced anywhere from their normal position down to the symphysis. One can readily see the absurdity of endeavoring to apply a support without a study of the degree of displacement of each organ, as one or all may be displaced at the same time. It has always been the author's method, in fitting an abdominal band, to be sure of the position of all the organs in the abdominal cavity. This is absolutely essential if one wishes to attain a satisfactory result. Under these circumstances the application of a properly fitting band which will immobilize the kidney has immediately a

beneficial effect. The patients feel relieved, are much stronger, and able to breathe better. Patients who have had distress after meals are now able to eat without discomfort. Their weakness, constipation, insomnia, and distress begin to subside, and on the whole their improvement is very rapid. It is only necessary to wear a band until all these symptoms subside. Emaciated patients gain in weight, and the kidney is again protected by the natural fat. The patients are allowed to wear a band one year.

It has been repeatedly proved that many patients have a movable kidney without suffering any discomfort. Again, a slight nephroptosis may be the cause of the innumerable symptoms. When patients have gastrointestinal and nervous symptoms it is believed there is always a ptosis of some other organ of the abdomen besides the kidney. The cases in which the kidney alone is movable are those that give little or no symptoms.

Besides properly supporting the kidney and other displacements of the viscera, diet, tonics, electricity, and massage all hasten the result of the treatment.

A FATAL CASE OF POISONING BY QUININE.

The *Medical News* of December 5, 1903, gives the following abstract of a case which is of interest, the literature of quinine poisoning being very scanty and a fatal case almost unique. It is reported by R. H. Quill (*Journal Royal Army Medical Corps,* October, 1903): The patient swallowed, evidently with suicidal intent, a quantity of sulphate of quinine in solution, amounting to about 240 grains. Within two minutes the symptoms of poisoning came on, beginning with retching and vomiting, which was favored by the prompt administration of an emetic. This was soon followed by almost total unconsciousness, slow and labored respiration, and a barely perceptible pulse, which, under very active stimulation, would return for a time only. A few hours later convulsions affecting mainly the lower extremities came on, and this was soon followed by death. Postmortem examination showed the blood fluid and very dark in color. The brain was congested, and the lateral ventricles were full of serum. The liver, lungs, and kidneys were also congested, but otherwise healthy. There was no inflammatory or corrosive appearance of the mucous membrane. The author believes that if the stomach pump had been efficiently used within a short time after the accident, it is very possible that the fatal issue might have been avoided.

TREATMENT OF ACUTE ANTERIOR POLIOMYELITIS.

In the *Southern California Practitioner* for December, 1903, WING in discussing this disease reminds us that the indications for treatment vary with the stages of each attack. In the stage of invasion we must strive to limit the amount of blood in the spinal cord; that is to say, arrest the inflammatory and degenerative processes and promote the quiet and comfort of the patient.

Keep the patient and the room quiet. Try to have the patient lie upon the side. Try to use hot applications to the spine—a useful measure if efficiently done, a harmful measure otherwise. If either of these things, or the use of sinapisms to the spine, increases the restlessness of the child much, omit them. Do not fail to learn the state of the urinary bladder and meet the conditions.

If fever is present aconite and phenacetine are probably the best drugs. Aconite is best given by Ringer's method, an average dose every twenty minutes for an hour, then every thirty minutes for two hours, and subsequently *pro re nata.* The best results in giving phenacetine for fever follow an average dose every half-hour three or four times, and then at intervals of from two to four hours. An average adult dose is one grain an hour, but when more than four grains is given at one time an undesired amount of sweating is apt to occur.

If pain is present, phenacetine in relatively large doses is often an efficient drug, at whatever intervals the amount of pain suffered indicates. Hot applications to the seat of pain, if efficiently made, may obviate the use of analgesic drugs. Opiates are rarely needed. Sodium bromide may be needed as a sedative.

An active purgative is always indicated For children, calomel is the favorite. The

1-20 grain tablet triturates made by Fuller's method are the best. Give ten at once, and repeat one every two hours till a free movement occurs.

If the bladder is normal the free use of water will secure ample diuretic effects. There is no very valid objection to simple diuretics; but if the bladder is paralyzed diuretics are contraindicated.

In selected cases hot baths or prolonged warm baths may be of service. As a rule it is probably better not to use them.

The kind and amount of food given should be specified by the medical attendant, and is to be determined by the usual rules.

In the stationary period, the interval between the acute symptoms and the well established paralysis—from two to six weeks—the therapeutic indications are to keep the patient quiet and to maintain the general health. Tonics may fail to do the patient good, but they cannot fail to help the family. Hence do not abuse them, but use them.

Gentle exercise, massage, and electricity may be used at this stage.

As soon as general conditions indicate that active measures do not increase existing conditions, systematic and persistent exercise must be begun, pushed vigorously, and continued for more than a year. Voluntary exercise is excellent, but is rarely efficient. Massage is by far the best method of exercise, and when mechanical massage is available, practically it is better than manual massage.

The therapeutic use of electricity in these cases has two points in its favor—it may please the friends of the patient, and it can be made to exercise the muscles. It is not often possible to induce a child to tolerate a current strong enough to secure efficient muscular contractions, and hence the therapeutic value of electricity in these cases is variable and uncertain.

Attention must be called to Gower's assertions that in these cases after six months the lesion in the cord has become a scar and cannot be influenced by any therapeutic measure. This is eminently true, and in the chronic stage medicines cannot influence the cord or the paralysis, but treatment can, and this treatment is exercise of the affected muscles. Such exercise must be energetically continued as long as any improvement at all is observed. This period, as stated already, may be much more than a year.

In all stages of the disease the affected limbs must be kept warm and protected, and the best orthopedic skill available should be secured to reënforce and supply weakened and lost muscles.

In the hopelessly chronic cases tendon transplantation has proven of great value.

CARE OF PREGNANT AND PARTURIENT WOMEN.

MAGEE in the *Southern California Practitioner* for December, 1903, gives the following advice in regard to the care of pregnant women:

The author states that no one has a right to take a case unless he has the time to give that is required. There are a great many men who will apply forceps to terminate a case simply that they may get away and attend to other business, when the case would terminate itself if given a little time. If the physician is rushed with work let him turn his case over to some one who has more time and is equally capable, and there are plenty such. Of course, let it be understood that the value of applying forceps when indicated should not be underestimated. There comes a time when the safety of the mother and child, or both, demand it, but as long as both are doing well do not operate simply to save your time.

In regard to preparation, be as careful as if preparing for an abdominal section. The time is past when a man can enter the lying-in room with his street clothes on, and having washed his hands in a precursory sort of way, pour some oil on the fingers and make an examination under the patient's clothes, she perhaps standing. The writer has seen this very thing occur. Make as few vaginal examinations as possible. In normal cases one or two at the most are all that are required. He has seen men sit for half an hour at a stretch with the hand in the vagina, pretending to help the patient. The chances for him doing damage far exceed the little help he may be giving. The less meddling the better. It is better to use gloves, or at least finger-cots, on the examining hand, and one should wear a sterilized suit or gown during the delivery. After delivery careful attention to any

tears, and then the delivery of the afterbirth, allowing at least twenty minutes before resorting to Credé's method, and an hour before manual delivery is attempted for adherent placenta, and then only after another complete cleaning up. A drachm of ergot by mouth is the writer's routine practice after the placenta is delivered. Sterilized pads should be placed on the perineum.

POISONING PRODUCED BY THIRTY GRAINS OF SALICYLATE OF SODIUM.

Among the interesting reports on excessive effects of drugs which we publish from time to time the following record by JONES in the *Glasgow Medical Journal* for January, 1904, is of interest:

The diagnosis made was lumbago with sciatica. The treatment consisted of an external application of chloroform liniment, and the internal administration of 30-grain doses of salicylate of sodium in a tumbler of water.

In about three hours after his first visit the author again received an urgent summons, and found that within a comparatively short time after taking the first powder and applying the liniment she spoke favorably of her feelings, and remarked that she felt quite strong, and had only a slight sensation of pain. Shortly afterward she complained of a feeling of swelling in the abdomen, which quickly became distended, producing much discomfort and oppression. She had also a considerable amount of pain in the abdomen and back; a singing noise in the head, as if it would burst; and a hissing noise in the ears, like the blowing off of steam. Then followed an outburst of great excitement, the patient expressing herself in exaggerated and strong language, and becoming very violent.

When seen in about an hour after this outburst she complained of a great load or weight about her heart, "as if dragging," and a sensation of sickness. She had a general feeling of prostration, and expressed the belief that she was dying. She was absolutely free from pain, but complained of thirst and of a ringing noise in the head. The heart was regular, the pulse full and bounding, 100 per minute; respirations free and regular; temperature normal; the tongue white.

Previous to this the patient had passed a great quantity of wind, and had also evacuated much urine. During the hour the writer remained at her side she was rather restless, tossing her head from side to side, and throwing her arms about. She remained in this state for about four hours, and then dropped over to sleep. When seen the following day she was in her usual health, and complained only of the pain in her back and leg.

The question arises whether these symptoms were purely those of salicylism, or a case of salicylism with hysteria. If it were salicylism, then a single dose of 30 grains, well diluted, produced it, as the patient had not had any medicine previously. This dose, though comparatively large, is by no means so large as the author has prescribed without bad effect.

If the question of hysteria be taken into account—and in this patient something of the kind is suspected—one would require to prescribe cautiously in such cases. Moreover, the menses were present at the time, and this circumstance suggests that it might be well to make inquiries about this function before prescribing in such cases.

A sample of the salicylate of sodium prescribed was submitted for analysis to Professor Stockman, who kindly interested himself in the matter. On his authority the writer is in a position to state that the medicine used was perfectly pure.

TREATMENT OF EPISTAXIS.

SOUTHARD advises the following plan in the treatment of epistaxis. In the *Pacific Medical Journal* for December, 1903, he reminds us that in the treatment of epistaxis we should bear in mind a fact which may save ourselves much anxiety, viz., that clinical experience has demonstrated that hemorrhages from the nose, whether following an operation or an accident, have a tendency to cease spontaneously. Fear may prolong the attack by exciting the heart's action. In profuse hemorrhage a patient may even lose consciousness, when the hemorrhage stops for a time.

The treatment is purely local. In every case of epistaxis the first thing to do is to examine with painstaking care the interior of the nose for the source of the hemor-

rhage. This must be done under good illumination; usually slight pressure over the septum will check the bleeding for a moment, giving the examiner an opportunity to locate the bleeding point. He should then cauterize the erosions either with chromic acid or the electrocautery, which usually acts promptly. In case the general practitioner has not the appliances at hand to carry out this treatment, what may he do to check the hemorrhage temporarily? In the first place, as stated above, the hemorrhage tends to cease, but if it does not, then he may try various remedies, as follows: First, try firm pressure over the cartilaginous septum. This is done by taking a wad of absorbent cotton, moistening it with a two-per-cent solution of cocaine, to which may be added a few drops of adrenalin, if convenient. With the finger the cotton is held against the septum. In very many cases this will be all that is necessary. In a few moments the bleeding stops, and, for a time at least, we need not expect a renewed attack. Should this fail, ice compresses should be applied to the nose, while to the back of the neck an ice-bag may be held. These simple remedies failing, he may resort to plugging of the posterior nares or packing with strips of gauze through the anterior nares. These two methods call for exceptional care, as there is more or less danger of causing injury to adjacent parts, and an inflammation in the Eustachian tubes, when a mastoiditis with cerebral complications may follow (Casselberry).

The safer method is to use the Simpson intranasal tampons, which will be found to act more promptly and safely than either the postnasal plug or gauze tampon. These intranasal tampons are made by placing a thick layer of cotton between two layers of thin muslin, then under great pressure the cotton is compressed into sheets resembling cardboard of about one-quarter of an inch in thickness. By means of dies these sheets are cut into various sizes. If too large they can be trimmed with ordinary scissors, when they are more easily inserted into the nostrils. In a few minutes they expand under moisture in the nose and compress the bleeding points firmly. Experiments made show that they exert several pounds pressure. The following day the tampon can be easily removed. With one of these plugs in his nose a patient can be sent to the specialist should the general practitioner not care to assume further responsibility.

It should be understood that none of these remedies have a curative action. They are used to stop the present hemorrhage, after which more radical measures must be employed to effect a permanent cure. For this purpose no better method than cauterization has been found. Should the general practitioner not care to assume responsibility in a given case he can insert a Simpson intranasal tampon, when the patient can safely journey to the specialist. For office work the author prefers the electrocautery rather than the chromic acid, as it is easier controlled.

THE TREATMENT OF CATARRHAL ENTERITIS IN WOMEN.

In the *American Journal of Obstetrics* for December, 1903, GILLMORE tells us that above all things patience is the prime requisite for the successful treatment of this decidedly chronic complaint. The patient is requested to weigh herself in the beginning of the treatment, so that accurate information may be obtained from time to time. Her diet, even in very marked cases, may be comparatively generous: Clear soups, eggs in all forms, one or two quarts of milk daily, matzoon, buttermilk, etc., rice in small quantities, small amounts of bread twice baked, and water crackers, custards, ice cream, roasted and broiled meats. Vegetables are usually restricted entirely at first, as well as all uncooked fruits, pastry, cake, etc. After a few weeks of experimentation the patient herself will be able to modify, enlarge, or restrict her diet according to her requirements.

The bowels should be regulated with some form of cascara sagrada. If there is a tendency to obstinate constipation, or too free movements, high colonic flushing is indicated. The patient is directed to take a quart or more of warm water, mildly alkaline, or normal saline, for the purpose of emptying her lower bowel. This is followed by a quart of water containing 8 cubic centimeters of the normal fluid extract of hydrastis. When it is difficult for the patient to take a satis-

factory high enema, the knee and chest position is a valuable and simple means of accomplishing the desired end.

The writer has obtained uniformly excellent results with a pill consisting of powdered ipecac, 1-8 grain beechwood creosote, 2 grains black pepper powder, 2 grains naphthol, 1 grain extract of hydrastis. These pills are so coated that they are not affected by the gastric juices.

Acetozone suggests itself as a valuable adjunct, but as yet evidence sufficient to be valuable has not been gathered.

In conclusion, the writer cannot dwell too strongly upon the value of inspecting the feces, and ranking it as equally important with the chemical and microscopical examination of the twenty-four-hour specimen of urine. If this is done he believes many an obscure case which comes to the gynecologist for relief, and which is, in many instances, treated unscientifically and with unconscious cruelty by the man who in his heart says "neurasthenic," will yield gratifying results.

OBSERVATIONS ON PUERPERAL SEPTIC INFECTION.

JEWETT contributes to the *Brooklyn Medical Journal* for January, 1904, a paper on this theme. He points out that the diagnosis must exclude non-septic infectious diseases and other than pelvic sources of septic infection. It should also be known whether the vagina or the uterus is the seat of the infectious focus. In nearly all cases the primary seat of infection is the uterine cavity.

Membranous patches in the vagina may be treated with applications of tincture of iodine or of strong carbolic acid, followed immediately with alcohol, and repeated two or three times daily, or may be dealt with after the method of Webster by vaginal packs of glycerinated formalin.

When the uterine cavity is the seat of infection, the uterus should be explored digitally to learn whether it contains fragments of placenta or of membranes or blood-clots.

Necrotic material can best be removed with the gloved finger and dressing forcepts. Débris may be swept out with a soft cotton ball held in dressing forceps, or by irrigating with normal salt solution. The foregoing manipulations should be conducted on a table with due aseptic care.

The dull curette is indorsed by many authorities, but results are better without even dull curetting.

Repeated curetting or douching is especially injurious.

When the uterus is empty no local measures are indicated. It should be remembered that about eighty per cent of streptococcic infections of the endometrium recover without treatment. On the other hand, most virulent infections will end fatally whatever treatment is employed. The temptation is to do too much.

The systemic treatment consists in bracing the resisting powers and in promoting elimination.

For the former purpose strychnine and alcohol are the principal measures.

Elimination is favored by one or two bowel evacuations daily, and by diuresis. Plenty of water should be introduced into the circulation by the stomach by enteroclysis, or if necessary by hypodermoclysis. The addition of acetate of sodium to the fluid injected adds to the diuretic effect.

Antipyresis when required may be effected by sponging or by wet sheet packs with water at a tepid or neutral temperature. The author's practice is to wet the double gauze sheet at short intervals with water, at body temperature. This involves no shock, is more agreeable to the patient, and more successfully controls the pyrexia.

Pus collections should be detected promptly and be dealt with as in other conditions.

Particular attention should be paid to the regulation of the feeding.

Under this simple plan of treatment the prevailing mortality may be very greatly diminished.

THE EFFICACY OF THE TREATMENT OF ACUTE AND PURULENT OTITIS BY ASEPTIC DRAINAGE.

In the *Journal of the American Medical Association* of January 2, 1904, GRADLE contributes an article on this subject. The object of his paper is to show the superiority of the treatment of acute purulent otitis by aseptic drainage. The method itself is the familiar one which has gradually gained in popularity. Its principles are paracentesis as soon as the diagnosis is made, and continuous absorption of the

discharge by an aseptic gauze drain in the meatus and a large dressing over the auricle. After sterilization of the meatus and auricle by means of carbolic acid solution the sterility of the gauze is further assured by the liberal use of powdered boric acid in the dressing. The external gauze pad is changed as soon as moisture shows, while the tampon in the meatus may be left twenty-four to forty-eight hours at a time.

Notwithstanding its simplicity and efficacy, the superiority of this treatment is not universally acknowledged. In illustration the author quotes two recent publications by acknowledged authorities. Politzer, in the latest edition of his textbook, does not wish to exclude syringing and other methods completely, and speaks of the "dry treatment," but in terms of qualified praise. Bezold prefers syringing, mopping, and boric acid insufflation because he has seen unsatisfactory prolongation of the discharge and frequent complications in the form of mastoiditis in consequence of the dry treatment. Gradle attempts to show us that such unfavorable opinions must have been based on imperfect technique.

What criterion are we to apply in judging of the efficacy of any treatment of purulent otitis? The duration of the disease and its severity are so variable that statistics as to time of recovery are not fully convincing. Even in cases of similar etiology the time of recovery varies with the individual's power of resistance. A valuable contribution to the point is, however, a table presented at the last meeting of the German Otological Society by Koener. Among seventy-eight cases the time required for healing was seven days after paracentesis done on the first day; nine days after paracentesis done on the second day; and up to twenty-six days after paracentesis done on the seventh day or later. From personal experience the author can say that whenever the "dry" treatment was carried out rigidly the course was shorter by at least one-third than he would have expected formerly in cases of similar severity.

The criterion which he has learned to regard as a proof of efficient treatment is the character of the discharge. In the milder cases, which either perforate spontaneously or are punctured within the first or second day, the discharge is always entirely serous and neither stringy nor purulent. He believes that the same rule applies to all cases of acute otitis, no matter how severe, provided the drumhead is punctured early enough. It is true a perforation or a paracentesis done after the third day usually yields a purulent discharge. But whenever the writer has had the opportunity to tap the drumhead earlier than forty-eight hours after the onset he has always obtained a clear fluid. By means of a properly absorbing gauze dressing reaching to the drumhead, and changed sufficiently often to remain absorbing and sterile, this serous discharge can be kept serous. Its change to a purulent fluid is due to faulty technique. No other treatment seems to prevent the discharge from becoming purulent except in the mildest cases.

It has been the invariable experience of the writer that after a climax in the amount of discharge within the first thirty-six to forty-eight hours the secretion diminished steadily and progressively to an uneventful recovery, provided due care was taken to keep it serous. The length of time of the discharge in some forty cases in which the method was carried out successfully varied from five to twelve days in the majority, and but exceptionally ran to fifteen days. If through any neglect the discharge becomes purulent, this progressive improvement is interrupted, as indicated by unchanging rate of secretion, and hence longer duration, greater discomfort, and the possibility of mastoid complication.

The change from a serous to a purulent or mucopurulent secretion seems to depend mainly on insufficient removal of the fluid. Hence a late spontaneous or operative perforation yields pus at once. If the drainage is not perfect by reason of some neglect the unfavorable change in the character of the fluid will take place speedily. Secondary infection through the meatus with other bacteria may also occur later on and prolong the disease. But during the earlier period this does not seem to be common.

The treatment by aseptic drainage requires, therefore, skilful supervision in order to be successful. But when successfully carried out it has yielded the quickest result and the mildest course. In no

case has the author seen any complication as long as he succeeded in keeping the discharge serous.

In the case of a purulent discharge due to a late perforation or insufficient care in the change of the dressing, he has found gauze drainage as satisfactory as any other mode of treatment. But since thick pus is not absorbed as freely as a serous fluid, the special superiority of the treatment is not as apparent as in those instances in which its early and proper use prevented purulency of the discharge throughout the entire course.

CONTRAINDICATIONS TO MATERNAL FEEDING.

While no one doubts that maternal feeding is the best for the child in most cases, occasionally it has to be stopped. NORTHRIDGE, in the *Brooklyn Medical Journal* for January, 1904, emphasizes this fact by the statement that it should always be considered a very serious proposition to wean an infant under eight months of age, especially in the summer-time. Its life may pay the forfeit.

The mother also must pay the price if she breaks nature's law in this regard. She is much more prone to uterine diseases, diseases of the breast, cancer, frequent child-bearing, and besides loses the pleasure of nursing her own child.

Normal maternal lactation being nature's method, we should be very sure that this has become abnormal beyond any known remedy before we advise or consent to the cessation of maternal feeding.

Because a baby does not thrive upon the breast is not in itself a sufficient reason for weaning. Perhaps it is fed too seldom, or for too short a time, or too frequently, or for too long a period, or the cause may be inherent in the mother or in the milk, and may be removable. The trouble should be searched for, and if possible overcome. Sometimes the cause being eradicated, nursing and nutrition go on again normally.

Because a mother is nervous or frail, or given to fits of anger, or unhappy, or does not wish to nurse her baby—these are not necessarily good reasons for weaning. They should be made light of, from the standpoint of the physician. Let the mother take the full responsibility of weaning if she insists, unless weaning after careful effort to nurse is deemed advisable.

From the author's own experience and observation he is convinced that earnest effort would result in many mothers nursing their babies where aforetime they deemed themselves incapable of doing so.

Some women, not knowing what joy they are missing, simply refuse to nurse their babies, often from some selfish motive, and "when a woman won't, she won't." These unfortunate babies must be wet-nursed or brought up artificially, and some of them die.

The following are some of the reasons given for weaning, which in the great majority of cases do not constitute real contraindications:

Cracked nipple.
Hyperesthesia of the nipple.
Ulcer of the nipple.
Caked breast.
Mother unwilling to nurse her child.
Irregular habits on the part of the mother.
Mother ill-tempered.
Mother given to fits of depression.

The physician should be able to overcome these by treatment and persuasion. If he cannot overcome the cause it becomes a real contraindication.

The following are some of the conditions which may in certain cases constitute good and sufficient causes for weaning; the doctor must judge in each case according to the facts, and his decision should be final as to whether the nursing shall go on or not:

Abscess of the breast.
Insufficient supply of milk.
Child losing weight or not gaining.
Indigestion in child.
Frequent emissions.
Syphilis in the mother; child apparently free.
Diseases of the nervous system.
Chronic diseases of the skin.
Menstruation.
Pregnancy.

The author's experience as to pregnancy and menstruation is as follows: In many cases menstruation does not interfere in the least with the nursing, in effect, either upon the mother or the child. It sometimes causes the mother to feel "dragged out" somewhat. Sometimes the milk will

disagree with the child temporarily. In such a case it is wise to give the baby an artificial food during the menstrual week and keep the breasts pumped out occasionally each day. If either mother or child appears to be gravely disturbed, of course the nursing should cease at once.

INTESTINAL ANTISEPTICS: THEIR USES AND LIMITATIONS.

STORCK gives his views as to this question in the *Journal of the American Medical Association* of December 26, 1903, and in the course of his remarks states that a drug which gives much promise of efficiency is ben[illegible]l-acetyl-peroxide (acetozone). Drs. [illegible]er and Novy have made extensive researches into its germicidal action, and have reached results whch prove it a superior germicidal agent. It has been used by Dr. Wasdin and others in the diarrhea of typhoid fever, and Drs. Freer and Marshall report good results in cholera and dysentery.

Dr. R. T. Strong, of the Biological Laboratory, Manila, says: "Quinine in enemata has usually given the best results in the treatment of amebic dysentery. The advantages of acetozone over quinine are quite apparent. It is capable of killing amebæ even in dilute solutions, and attacks the bacteria which are present in the intestines, greatly reducing the number of microörganisms in the stools."

The writer's experience is confined to the use of acetozone in six cases. In two cases of intestinal tuberculosis the bowel condition grew better after the third day, and the patient gained in strength and weight. In one case of advanced pulmonary tuberculosis accompanied with intestinal lesions, no improvement was noticed. In three cases of typhoid fever with diarrhea the improvement of the bowel conditions was everything that could be desired, and the patients made excellent recoveries. The stools were almost completely deodorized after forty-eight hours.

The group next in order is the sodium series. When preparations of salicylic, benzoic, or carbolic acid are desired to be given by the mouth for any condition in the duodenum, or high up in the small intestine, the writer prefers the sodium salts of the above mentioned acids as antiseptic agents, his preference being sodium salicylate. Holt thinks well of this salt in the summer diarrhea of children.

Now we come to the bismuth, magnesium, calcium and aluminum series. Owing to the feeble antiseptic action of the salts of the last three drugs, they have not met with much favor as intestinal antiseptics.

The salicylate and subgallate of bismuth are agents of some value. When an insoluble preparation is indicated, as in the treatment of tuberculous ulcer in the lower part of the ileum and of the cæcum, bismuth betanaphthol answers a good purpose.

Among the miscellaneous series carbon disulphide may be first considered. Dujardin Beaumetz says of this agent: "I have obtained most satisfactory results from the point of view of intestinal antiseptics." He further claims it to be superior to all other medicaments in favorably modifying putrescent intestinal processes in typhoid fever. Beaumetz cites M. Ckiandi-Bey and Sapelier concerning the non-toxicity of carbon disulphide.

Oil of turpentine has given marked results in the treatment of some cases of tuberculous ulcer, especially in cases with pronounced flatulence; improvement in the condition of the stools and in the general condition of the patient took place rapidly.

As for boric acid, it has not yielded any results in the writer's hands.

Where fermentative conditions, marked by meteorism and tympanites, are very active in the bowel, sulphurous acid is, for the most part, safe and fairly sure.

While reliable as an antiseptic, formic aldehyde causes much burning, even when used in weak solutions.

Where the seat of the disease is in sight and may be easily reached by applications, nitrate of silver proves a valuable antiseptic as well as astringent. Otherwise, owing to its rapid change, it is of doubtful antiseptic worth.

Up to this time, in the treatment of amebic dysentery, no other agent has given as good results as quinine, the writer asserts, and he has used both the sulphate and hydrobromate, and given preference to the latter.

Owing to its easy and rapid decomposition, nothing much could be expected of

such a chemical as potassium permanganate as an intestinal antiseptic.

In doses large enough to be of benefit as an antiseptic, iodoform irritates the stomach.

Lactic acid, which for a long time enjoyed a reputation in the treatment of the summer diarrhea of children, has been largely replaced by hydrochloric acid. Vaughan says, in speaking of the summer diarrhea of infancy: "The only digestive secretion which is known to have any germicidal effect is the gastric juice (hydrochloric acid); therefore, if this secretion be impaired, there is at least the possibility that the living germ will pass on to the intestine, will there multiply, and will, if it be capable of so doing, elaborate a chemical poison which may be absorbed." In conditions of the stomach where there is a deficiency of hydrochloric acid in the gastric juice, and where in consequence putrefactive changes in the intestine take place, hydrochloric acid is indicated; for, as the experiments of Hammarsten show, "putrefaction does not occur in the small intestine as long as the contents are strongly acid."

Whenever an eliminant and antiseptic is required at the same time, calomel is the agent to be employed. It is one of the safest and surest agents in fermentative and putrefactive conditions existing in the small intestine. Ox-gall, especially when combined with calomel, is of value in fermentative conditions due to deficient flow of bile.

THE TREATMENT OF ALBUMINURIA.

PYE-SMITH in the *Clinical Journal* of December 16, 1903, states that in cases of albuminuria the most important thing of all is to keep the surface of the body warm; and to see that the subjects of this condition are clothed in wool from the neck to the feet. We know boys are apt to be careless in this respect, and schoolboys particularly so. The second thing is to forbid bathing in the open air, or wherever the persons are tempted to stand about instead of at once rubbing themselves down and getting their clothes on. The next point is to restrict the amount of meat, and to entirely prohibit all stimulating liquors, though happily in modern times the majority of boys are brought up without beer or wine. When albumin continues it is very beneficial for the patient to have a hot bath before going to bed. That will often prevent the morning albuminuria which, although not indicative of organic disease, is certainly in many cases a precursor of it. At the same time it is important to keep the bowels open; the effect of a regular action of the alimentary canal is undoubtedly to ease the kidneys.

As to drugs, the only one is perchloride of iron. These lads are generally pale as well as thin, and they improve rapidly under the administration of the iron. If the parents can afford it, it is desirable that the youth should spend the next winter in the South. Where that cannot be managed, if you have a patient who is intelligent and will follow out your advice as to clothing and feeding, and abstinence from chills, and taking no liquor, it is astonishing how many of these cases will get perfectly well. Then, in eight or twelve months from the first examination for life assurance, they can appear again, and you will be able to insure them with a good conscience. On the other hand, the writer has more than once noticed youths who came thin and pale, and with a little albumin present in the urine, who did not develop Bright's disease, but who never became robust, healthy men, and in several cases finally developed tubercle. Therefore one should be very careful in such cases not to minimize the significance of the albuminuria, but to recognize that it shows a certain vulnerability of constitution.

The old plan of sending every consumptive patient on a voyage was often a mischievous one, for we must remember that those who run across the sea do not always change their mind or their body either, and that a perfectly salubrious climate does not exist on this earth. So we must not promise certain benefit from living abroad to those of our patients who are rich and able to go to any climate we recommend, or need commiserate those who are obliged to stop in the country to do the best they can under our advice. As in cases of phthisis, so also in albuminuria, some of our best cases have been amongst our poorer patients, in hospital or otherwise, to whom it would be cruel to prescribe leaving the country, or very often even leaving the town or district in which

they live, and who nevertheless by care, and regimen, and proper clothing, and regulations as to drink, do finally reward our efforts by recovering. On the other hand, one has known people who had every opportunity, and who yet unfortunately have succumbed to Bright's disease. The author recalls a patient living in the north of England, a wealthy man, who had Bright's disease, who asked him what he should do the next winter, and was told that of all places he could go to, probably Egypt was the best. He went there, and for a time enjoyed the sun and the dry, clear air very much; but it was afterward learned that he went out one day when a cold wind was blowing, after there had been some rain, caught a chill, which ended in pleurisy, and so he died just as he might have done if he had stayed in England. Since the British have obtained possession of Egypt it is said that they have taken their climate out there, and it seems that in this instance it was true.

On the whole, however, increasing experience gives us increasing hope, not only of relieving but of curing patients suffering from albuminuria. Not only in the earliest stages of Bright's disease, but even in advanced cases, it is wonderful how much power of recovery is sometimes met with. At one time the best authorities believed that chronic albuminuria was "as fatal as phthisis." Now it is believed to be as curable as phthisis.

AN UNUSUAL CASE OF POTASSIUM IODIDE IDIOSYNCRASY.

Cases of idiosyncrasy to the effects of drugs are always of interest. In the *Medical Record* of January 30, 1904, GATHMANN reports a case of this character.

The patient had been ordered a saturated solution of potassium iodide, and took three doses of ten drops each, in water, on the first day; the dose was increased by one drop daily, so that on the fourth day he took three doses of thirteen drops each. On this day his finger-tips showed a slight cyanosis, and as no reason for this condition could be found in any of the vital organs, the drug was discontinued for the entire fifth day. Although this local cyanosis thereupon disappeared within twenty-four hours, the writer was not thoroughly convinced that this was not a mere coincidence, and that the symptom had really been due to the iodide.

So, on the evening of the sixth day, one single dose of fourteen drops was given the patient, and next morning he was afflicted in the following peculiar and even alarming manner: There had occurred during the night, after this single dose of fourteen grains, a diffuse ecchymosis under the entire skin of all his fingers and thumbs, so that at first sight they appeared exactly as if he had dipped his fingers, up to the metacarpophalangeal joints, into a pail of indigo dye. The discoloration stopped very abruptly at these joints, a few dark-red specks at its upper limit being noticed on closer inspection only. The fingers, in addition, were numb, cold, stiff, slightly swollen, and very painful. The little finger of each hand was most severely affected and almost absolutely black; the process lessened very slightly in each succeeding finger, so that the thumbs were of a very dark blue, rather than black color. The metacarpal region of each hand was normal in color, though just a little swollen. In addition, the extreme tip of the nose was similarly affected, though less severely. The toes, however, were and have remained entirely normal, and, in fact, excepting a few isolated, mild purpuric spots on the thighs and on one arm, the condition was confined altogether to the fingers and the tip of the nose.

Under the assiduous application of warmth and friction (and discontinuing the potassium iodide, of course), the fingers very gradually became less painful, the swelling subsided slowly (though leaving blisters on nearly all the middle phalanges), natural warmth and motion returned, and gradually the dark color faded, so that it was nearly three days before the patient and his friends felt quite reassured that the fingers and nose were safe from gangrene.

While the writer has found occasional occurrences of irregular ecchymotic spots, "mostly confined to places below the knees," and due to large doses of the drug, mentioned in literature, yet nowhere has he found the description of so intense and yet sharply circumscribed an ecchymosis of such peculiar and sym-

metrical distribution from this drug, and especially in the small dose named. There was no gastric irritation, coryza, acne, nor any of the other symptoms of iodism.

Neither his occupation (tailor), nor his past history, nor any other circumstances, seem to afford a clue why his feet should have remained perfectly normal while his fingers suffered so intensely.

THE TREATMENT OF OZENA OR ATROPHIC RHINITIS.

LACK advises the following plan of treatment in the *Clinical Journal* of December 23, 1904:

The important point to be aimed at is to cleanse the nose thoroughly and to keep it clean. The nose must be very carefully syringed. Any solution may be used; salt and water, a teaspoonful to the pint, is as useful as anything. It is not a question of antiseptics, but of mechanical removal of the discharge. The solution is best injected into the nose with a rubber syringe. Having washed the nose out, it is well to inspect it and to detach or to syringe away any crusts that remain. After this it is a useful plan to rub the mucous membrane all over with pledgets of wool on a probe, as in this way thorough cleansing is insured. The most important part of the treatment is, however, the next step—namely, to pack the nose with strips of cyanide gauze. A strip an inch wide and twelve to twenty inches long should be inserted, and the patient can be taught to do this for himself. This packing prevents the entrance of air into the nose, prevents the discharge drying, and prevents its decomposition. The result is that the discharge remains fluid, the nose no longer fills with tenacious crusts, and can be quite easily cleansed by simple syringing. This method is similar to that of Gottstein, who introduced rolls of wool into the nose with the idea of irritating or stimulating the mucous membrane, and so producing a more copious fluid discharge. The principle upon which his treatment was founded was wrong, and the method was painful. The use of gauze, as above described, is quite painless, is easily carried out by the patient, and is founded upon rational principles. The gauze itself inhibits bacterial growths, and yet is non-irritant. In the majority of cases it is sufficient to syringe the nose twice daily, but the packing should be worn continually, being only removed for syringing.

It may be objected that patients will not carry out this treatment, but it will be found in practice that patients like it, and that they are much more comfortable when the nose is packed. Even if it were uncomfortable, the majority of patients would do anything which promised them a hope of relief. Should it give rise to headache or discomfort at first, toleration is soon obtained by perseverance.

Again, it may be objected that mouth-breathing, which this treatment necessitates, is injurious; but in these cases it is far better for the air-passages and lungs that the air reaching them should pass through a healthy mouth than through an extremely unhealthy nose.

Another result worthy of mention is the effect of the packing upon the ears. Many patients suffering from Eustachian obstruction and middle-ear disease as the result of ozena are markedly improved by this treatment.

THE TREATMENT OF ENTERIC FEVER.

In the *London Practitioner* for January, 1904, MOORE states that turpentine fulfils many indications in enteric fever. Not only is it an excellent diffusible stimulant and a valuable antiseptic, but it also relieves chest complications, controls diarrhea, checks meteorism, and stays intestinal hemorrhage. Turpentine is therefore one of the best all-round remedies we possess for the treatment of enteric fever. It is conveniently prescribed in capsules or perles containing 5 to 10 minims of either turpentine or terebene. Another good way of prescribing it is with spirit of nitrous ether, as follows:

℞ Spiritus terebinthinæ, f℥ij;
Spiritus ætheris nitrosi, f℥ij;
Spiritus chloroformi, f℥ij;
Misturæ amygdalæ, ad f℥vj.

M. Ft. mistura. Signa: Shake the bottle. Half an ounce for a dose.

Caution is necessary in the exhibition of turpentine in the presence of albuminuria, or when there is disease of the kidneys or bladder.

While it is always an alarming symptom, intestinal hemorrhage is by no means necessarily followed by grave results. In

the many cases which the writer has seen of profuse intestinal hemorrhage in enteric fever, the impression left upon his mind, he asserts, is that an unexpected and surprising improvement in the patient's state sometimes follows a single copious bleeding, whereas repeated bleedings of less amount nearly always end in death. Should blood pass from the bowels in the third or fourth week, we naturally regard the symptom as a danger signal, a warning of impending perforation. For the source of the hemorrhage at that stage of enteric fever is almost certainly the blood-vessels running beneath the transverse muscular fibers of the intestine.

All authorities agree that the first and chief indication in intestinal hemorrhage is absolute rest. This is secured by withholding food for several hours, or by giving only small quantities of whey and egg-water, and by the free exhibition of opium, preferably in the form of hypodermic injections of morphine. Ice may be sucked, and an ice poultice, or a bladder containing broken pieces of ice, may be laid over the right side of the abdomen, as recommended by Murchison. The same excellent authority found the following mixture almost invariably effectual for stopping the bleeding:

℞ Acidi tannici, gr. x;
Tincturæ opii, min. x;
Spiritus terebinthinæ, min. xv;
Mucilaginis acaciæ, f℥ij;
Spirit. chloroformi, min. xx;
Aquæ menthæ piperitæ, ad f℥j.

M. Half to all of this quantity at one dose.

LUMBAGO: ITS LESSONS AND ANALOGUES.

Sir WILLIAM GOWERS in the *British Medical Journal* of January 16, 1904, gives us advice as to the treatment of lumbago. He says that aperients are of the first importance in all rheumatic and pseudogouty cases, and nothing is of so much value as salines. They free the system of bile far more than the so-called "cholagogues." Taken into an empty stomach they seem not to be absorbed, but to pass on into and through the intestine, augmented by the exosmosis they excite, and they carry away the bile they find in the bowel. This has done what digestive work it had to do, and much of it would simply pass back into the blood, through the liver, and increase the amount of harmful matter in the general circulation. At least this is understood to be the reason why salines do remove bile abundantly, and improve the general state. But if a saline is taken when the stomach contains food, it seems simply to mix with this and to be absorbed, and its valuable "flushing out" action is not obtained. Moreover, it seems to pass through the stomach more readily, and to excite osmosis and peristalsis in the bowel more effectively if concentrated than if dilute; and thus the stronger aperient waters act better than those that are dilute. The writer adds, parenthetically, that what he has said is quite consistent with the mild aperient influence obtained by some persons from a glass of plain water in the early morning. That which differs in any way from the normal character of the intestinal contents may have a similar effect; that which is more dilute may act like that which is less dilute, just as the bladder is irritated by watery urine as well as by that which is concentrated.

The medicinal agents which have most effect on articular rheumatism seem to have far less influence on rheumatic muscular fibrositis. The salicylates, for instance, seem to do little good, except in the most acute form. In this it is very difficult to discern with precision the effect of any therapeutical measure. We cannot try experiments in severe suffering. We can very seldom secure the essential condition for observation, namely, that the agent to be tested shall be used with no other change in the influences to which the patient is exposed, that no other attempt to do good shall be made at the same time. Hence doubt must attach to many of our records of apparent good, and they need to be confirmed by subsequent observations before they possess weight. The writer mentions this because this morbid state is one of those in which the opportunity for increasing and making sure our therapeutic knowledge comes chiefly to the general practitioner. But we may give the salicylates, or salicin, or aspirin. The salicylate of potash or lithia seems a more reasonable salt to use than the more common salicylate of soda. The salicylates have the disadvantage that we cannot obtain, in combination with them, the diuretic influence of nitrous ether. The writer believes that most good is obtained in the

early stage from nitrous ether, citrate of lithia, and colchium, with which small doses of perchloride of mercury may be combined if the affection is of considerable intensity.

The developed brachial form is extremely obstinate, especially when the fibrositis has spread to the nerves or joints. It is often difficult to perceive that any treatment has a marked effect if the opportunity of the early stage has been allowed to pass. The malady lessens, and passes away in time, leaving only such lasting effects as neuritis or arthritis may have caused. Good is certainly done by superheated air, but the applications have to be continued for weeks, and the accessory incidental disturbance seems to lessen the benefit derived.

The traumatic form of tendinous fibrositis, when it settles down to a satisfactory condition, with pain on any tension, and often some tenderness on pressure, resists almost all treatment. It also passes away in time, but unfortunately the time is long before the tendency to subside manifests itself. If any constitutional condition seems to coöperate in perpetuating the effects of injury, this of course should be treated. It is chiefly to be discerned when fibrositis is set up by slight habitual strain. Rest is important, but is not easy to maintain for an adequate time.

Counter-irritation sometimes lessens the pain, and the actual cautery is certainly the most effective form. A local measure that often does good is the deep hypodermic injection of cocaine, repeated daily for two or three weeks. It unquestionably promotes the subsidence of the sensitiveness, provided the ease obtained is not abused by increased exertion. Probably eucaine would be equally effective.

HOW TO TREAT A CASE OF INSANITY.

JONES in the *Lancet* of December 28, 1903, gives directions as to the treatment of the insane. He points out that the remedies which favor sleep are either direct, which act primarily, or indirect, which are not in themselves narcotics, but favor sleep by removing disturbing elements. Among the latter is iron, which by relieving anemia also relieves the restlessness and sleeplessness often accompanying it. Iron has exercised marked benefit in cases of epileptic insomnia. Digitalis, by adding tone to the cerebral arterioles, effectually prevents passive congestion in lax arteries when the patient occupies the recumbent position; it also probably causes a due amount of cerebral anemia. Tartar emetic lessens arterial pressure and acts as a vascular sedative; it is very useful in the restlessness of sthenic inflammations, and when combined with opium it is very effective in lessening sthenic delirium. Alcohol, administered with easily digestible nourishment during periods of exhaustion, especially just before retiring to rest, is a most valuable sedative.

Of the direct sedatives, bromide of potassium is certainly the simplest if it be not the most efficacious. It is very useful in the insomnia of overwork and the restlessness arising from reflex affections; it can be given alone in 20-grain doses three times a day or in combination with chloral (15 grains), which is the best remedy for simple insomnia, and there are no unpleasant after-effects from the combination. If chloral hydrate is prescribed for old people care should be taken to have a hot-water bottle in the bed and the feet kept warm. Opium has the disadvantage of (1) losing effect from the toleration which follows repeated doses, and of (2) setting up digestive troubles, but it is very useful as an anodyne, either in 10-minim doses of the tincture, or in subcutaneous injection of morphine, one-sixth to one-half of a grain. Opium is very suitable in cases of sleeplessness in restless old people, and seems to act on them as a sedative stimulant. Sulphonal in 20-grain doses three times a day, taken in warm milk or beef tea, acts as a marked muscular depressant, but it is apt to cause intestinal trouble, and its action is cumulative. It is best given for continuous excitement, for a few days at a time, and then withdrawn. To control sudden violent aggressive motor excitement it is of no use. Some chronic noisy cases do very well with a dose of sulphonal at night. Trional in similar doses is less depressant, but is also an intestinal irritant owing to its insolubility. There is no better remedy than a hypodermic injection of hydrobromate of hyoscine, from 1/200 to 1/50 of a grain. The effect is very fleeting, but it is immediate; the patient is as excited as ever the next day, or even in a few hours, but care should always be taken to visit the patient frequently after the injection, and it may be

advisable to combine with the hyoscine a subcutaneous dose of strychnine. Hyoscine is used less to procure sleep than reflexly to cause muscular depression. Paraldehyde in one-drachm doses is a valuable sedative for old people, or those in whom the circulation is feeble. It does not weaken the heart; the pulse gains in strength under its action; it is not an irritant, but on the contrary is usually borne well by the stomach; it is superior to chloral for the insomnia of alcoholic delirium; and as a hypnotic in cerebral affections it is most useful. Noisy paretic dementia, the multiform manifestations of hysteria, and the convulsive neuroses are all greatly improved by it, and it can be taken alone, in water, or with milk or beef tea. Cannabis indica, in combination with bromide of potassium, has been recommended by some for epileptic excitement, nervous insomnia, or acute mania, but the author's experience fails to recommend it. In some women it produces very unpleasant hallucinations, and the benefit, reported in the experience of others, may perhaps be due to the simple bromide, often used in combination with it. Bromide of potassium in large doses of from four drachms to one ounce has been recommended for maniacal excitement. Perhaps the best cure for sleeplessness as well as motor excitement is open-air exercise. Sleep can often be obtained by special attention to diet, and artificial feeding may become most important.

When a patient refuses food, gentle and firm persuasion may overcome the refusal; beyond this the nurse should never go. No apparatus for forcible feeding should be employed by any other than a medical man—who chooses his own method, either by the mouth or with the use of the nasal tube. Feeding is the sheet-anchor of treatment in many cases of early toxemic insanity, such as the puerperal form, and artificial feeding should be resorted to early and often, during every quiet interval and at each opportunity, to compensate for the profound exhaustion—often intense—caused by restlessness and maniacal delirium.

One of the most important points in treatment is attention to the state of the bowels, for constipation is a most prevalent irregularity in the insane. Calomel in doses of ten grains is easily borne and is probably the best purgative. Croton oil, even in as large a dose as two minims, is often ineffective. It is difficult to get the insane to take tablets or pills, and almost impossible to give these with food—even if it were desirable. Epsom salts, or some of the foreign well waters, such as "Hunyadi Janos," are very effective when given daily and in free doses—generally twice or three times the dose required for a sane person.

Restraint, to which reference has been made, should never be permitted in a private house; when it appears necessary, the time for home treatment is over and asylum care is urgently indicated. Asylum treatment often renders unnecessary the excessive and damaging use of narcotics, calmatives, and restraints, which are so often used to prevent the noise and destructiveness of patients treated in their own homes. The treatment in asylums consists in diverting the morbid mind into healthy channels, the removal of disturbing causes, and the encouragement and example to industry afforded by those in attendance. Perseverance, attention, uniform kindness, yet firm determination, are characteristics always appreciated in the asylum nurse. It is not too much to say that the regular routine of asylum life tends to favor regular processes of thought and reflective action, which are often the first symptoms of recovery in patients who have suffered from delusions. In the asylum there is constant but not too direct watchfulness and supervision, combined with forbearance and respect. These characteristics form what is usually termed the elements of psychic or moral treatment, and they are invaluable in asylum as well as in home treatment. They constitute nothing that is new, and they are the basis of the practice of general as well as asylum physicians.

THERAPEUTIC ADVANCES.

In a summary of the therapeutic advances of the year 1903 the *Lancet* of December 28, 1903, reminds us that the marked influence that adrenalin exerts on the blood-vessels and upon the blood-pressure, constricting the former and increasing the latter, has naturally suggested its employment in various conditions of the eye in which the effects might be expected to prove beneficial. Thus, Dr. A. Yvert, Dr. Wessely, Dr. Konigstein, Dr.

Marques, Dr. A. Darier, whose death has so recently occurred, and many others, speak in high terms of its value when applied to the congested conjunctiva in a perfectly sterilized solution of 1 part in solution in 1000 parts of water. The local anemia it occasions can be augmented with cocaine, and the combination of the two remedies appears to be of greater service in acute catarrhal affections, in rheumatic conjunctivitis, and in gouty congestion of the conjunctiva. Adrenalin is also useful in iritis and by its depressor action on the blood-pressure in cases of glaucoma, whether subacute or intermittent, and in cases of embolism of the retinal artery. It appears to be contraindicated in such operations as iridectomy, and cataract where the globe is opened, both Dr. Darier and Mr. Stephenson having noticed intraocular hemorrhage of a serious character. It has been injected subconjunctivally, but it must not be forgotten that it is a very dangerous poison, and it is right to add that Mr. A. F. MacCallan and others have reported several cases of glaucoma in which the use of adrenalin caused increase of tension.

SCIATICA.

The *British Medical Journal* of January 16, 1904, quotes a plan of treatment devised by Dr. FEDDERSEN, of Wiesbaden. Acute cases should be put to bed, and the affected limb wrapped up in wool, with the knee flexed by means of a small cushion. The diet should be of warm liquids, alcohol and strong tea and coffee being avoided, and a mild diaphoresis being promoted by the use of warm demulcents. The bowels are to be well opened with castor oil. Dr. Feddersen's main medicament for this class of cases is sodium salicylate in large doses for four or five days; if this is ineffectual he uses one of the numerous substitutes, especially aspirin. He continues the drug, in smaller doses, for some time after the pain is over. Very intense pain calls for an injection of morphine over its acutest seat.

The subacute form tends to spontaneous cure; the most useful adjuvant drugs are potassium iodide, oil of turpentine, methylene blue, and arsenic; fly-blisters may also be most valuable. For the neuritic form galvanism commenced at the end of the second week is recommended, the cathode being placed over the sacrum on the affected side, and the anode over the most tender spot; a warm bath is also of great use. If the disease becomes chronic the general principles of treatment are to improve the arterial blood-supply to the affected limb and to restore abrogated function by the systematic use of physical methods. The author is, not unnaturally, an advocate of the Wiesbaden hot baths; he recommends the simultaneous application of the hot douche to the sacrum, the hip, and the affected nerve. Passive movements should be employed at first, then successively active movements and resistance exercises. The passive movements may at first produce an increase of pain, but this is temporary and to be disregarded. Much good results from stretching the nerve by forcible flexion of the hip, the knee being kept extended. Muscular atrophy indicates the faradic current, which should be just strong enough to cause muscular contraction without painful tetanus. Many other forms of mechanical and electrical treatment which have been much vaunted are of value simply by their "suggestive" use. As an aid to cure and in the prophylaxis of recurrences, Dr. Feddersen recommends the morning use of a tepid to cold sponge bath—known in Germany as "the English sponge bath."

THE USE OF PURE CARBOLIC ACID IN THE TREATMENT OF SMALLPOX.

NEECH and HODGSON report to the *Lancet* of December 28, 1903, their results from this plan of treatment. Briefly, the following are the results of their extended experience of this remedy. Altogether they have employed this method of treatment in 136 cases. Of this number five died, which gives a death-rate of 3.6 per cent. This compares very favorably with the results obtained elsewhere. The epidemic, though not so virulent as some, was by no means a mild one, as out of the 136 cases 22 were of the confluent type, 12 were semiconfluent, and 103 were discrete. Of the latter 15, though discrete, were very severe cases. The patients on the whole were anything but efficiently vaccinated, so that the character of the disease and the modifying effects of vaccination did not materially contribute to this low mortality.

The three unvaccinated children who died were all suffering from severe confluent smallpox; one was a baby whose mother was suffering from smallpox when delivered. The 27 unvaccinated cases above five years included some very severe ones, but the only fatal case was a chronic alcoholic who succumbed to heart failure following bronchopneumonia in the convalescent stage. Amongst the vaccinated the death was in a case of hemorrhagic smallpox, which is almost invariably fatal.

The method adopted was that first mentioned—namely, to apply the pure liquid caroblic acid with a small camel's-hair brush to the vesicles over a certain area of the body each day, commencing with the face and head, until the whole of the vesicles had been touched. These applications were continued until the vesicles showed signs of drying up or of aborting. Some considerable time is required to do this as it should be done, carefully and thoroughly. Care must be taken to avoid the acid running on to the healthy skin.

Although a careful watch was kept for the appearance of toxic symptoms, carboluria was noticed in only two cases. Curiously enough, both belonged to one family, so that idiosyncrasy might possibly have had something to do with it, and it is quite possible that the acid may have been more freely applied than is usual or necessary in at least one of these cases. In some cases only one side of the patient was painted with carbolic acid, and the other side was either left alone or treated with other local applications, such as carbolic acid with camphor, guaiacol in olive oil, or formalin. In all such cases it was plainly seen that carbolic acid gave the best results. This was thought to be the simplest way to find out which drug applied locally gave the best results, especially as types of smallpox vary so in vaccinated persons. The application of the acid caused very slight and transitory pain and relieved the intense irritation. The effect appeared to be local, the pustules rapidly shriveled and scabbed, and the further development of the papules and vesicles was either prevented or if not aborted comparatively little discharge resulted. In fact, all the vesicles had formed into scabs in from five to ten days after treatment, according to the severity of the cases, and in from ten to eighteen days the scabs had fallen off, except of course those in the palms of the hands and on the soles of the feet. The ulceration of the skin in the pustular stage was practically prevented, so that dermatitis with cutaneous and subcutaneous edema was lessened, and the tendency to the formation of scars was not nearly so great. The offensive odor from the eruption was entirely absent, and to a certain extent the application kept the patients clean. The absorption into the system of septic material from the pustules is either prevented altogether or is only very slight. This along with the lessening of the process of ulceration abolishes the secondary fever or renders it very mild. The temperature generally kept at a low level after the appearance of the pustular stage, and was never much above 102° F. even in confluent attacks in unvaccinated persons, and was normal long before it usually is in untreated cases. Delirium was very infrequent, and the pulse was not markedly increased, as is usually the case when the pustular stage is reached. The risk of infection by aerial convection is also considered to be much lessened, and a patient can be discharged with a greater feeling of safety a week or a fortnight before the usual time, as the treatment cuts short the disease to that extent at least. There was an entire absence of complications, such as multiple abscess, etc. The early removal of the scabs was effected by means of carbolic oil bread poultices.

RABIES.

Those who still deny the existence of such a disease as hydrophobia will no doubt be interested in the report by BRAWNER (*Atlanta Journal-Record of Medicine,* November, 1903), of 150 patients who have received the Pasteur treatment at the Georgia Pasteur Institute, all the cases, with the exception of one, being treated successfully.

Of those bitten on the face, the animal was demonstrated rabid by the inoculation test in eight cases, and in three cases by other animals taking the disease from the bite of the same animal. Of those bitten on the hands and bare feet, the dog was demonstrated rabid in thirty-nine instances. Of the total number of cases treated the dog was demonstrated rabid by the inoculation of rabbits in fifty-three cases, and by other animals taking the

disease in eleven cases. The dogs had typical symptoms in eighty-one, and escaped observation in six cases. The youngest patient treated was two years, the oldest seventy-two years of age.

The only patient unsuccessfully treated was an old man who had been bitten severely in the eye, through the nose, and on the lip, in a region supplied by many nerves.

At the Pasteur Institute at Paris the mortality has averaged one-half of one per cent, which is about the percentage lost by all the other institutes. Of those not receiving the Pasteur treatment it is said that at least 18 per cent died.

During the past three years Brawner has compiled a record of about 250 persons bitten by rabid dogs in the Southern States and by those supposed to have been rabid. Of these 170 received the Pasteur treatment, and only one such died. Of the remaining 80, some of whom resorted to that magical substance, the madstone, 16 died, or 20 per cent.

POSTOPERATIVE CYSTITIS IN WOMEN—PROPHYLACTIC TREATMENT.

BAISCH (*Münchener medicinische Wochenschrift,* Sept. 22, 1903) states that postoperative cystitis is produced always by bacteria which have been introduced into the bladder during catheterization. In order for cystitis to occur, an essential etiological factor is the presence of coexisting traumatic lesions of the bladder, or partial retention of urine. The bacteria which produce cystitis (staphylococcus, streptococcus, and bacillus coli) may be introduced into the healthy bladder without causing inflammatory changes.

In order to prevent postoperative cystitis, catheterization should be avoided whenever possible. In the cases in which retention of the urine absolutely demands the use of the catheter, repeated catheterizations may be avoided by injecting into the distended bladder 20 cubic centimeters of a sterilized two-per-cent solution of boric acid in glycerin. In the majority of cases this procedure is followed by an evacuation of the bladder, without tenesmus, in from five to ten minutes, and the patient thereafter is able to urinate spontaneously. In the cases in which the catheter must be used repeatedly, each catheterization should be followed by copious irrigations of the bladder with three-per-cent boric solution until spontaneous and complete evacuation of the bladder is reëstablished.

NON-MALIGNANT DISEASE OF THE ILEOCAECAL VALVE.

SCOTT (*American Journal of Obstetrics and Diseases of Women and Children,* Nov. 19, 1903) states that with the exception of two cases reported and operated upon by Mayo, only eight cases of non-malignant stenosis of the ileocæcal valve have been reported, and the latter were only diagnosed at autopsy.

The symptoms and signs of contracted ileocæcal valve are quite obscure, there being no pathognomonic symptoms, but merely the combination of those noted in appendicitis and obstruction of the small intestine.

A chronic ileocæcal obstruction is more often taken for appendicitis than for chronic intestinal obstruction. There are several reasons for this: first, because the symptoms of appendicitis are more numerous and marked than those of intestinal obstruction; secondly, because appendicitis is itself of more frequent occurrence than either the intestinal or valvular obstructions; and thirdly, a large proportion of these cases suffer from a combination of appendicitis and ileocæcal contraction.

Among the more important signs and symptoms there have been noted periodical pain at McBurney's point with thickening of the tissues, sometimes to such an extent as to form a good-sized tumor; tenderness at the same point, sometimes accompanied by rigidity of the abdominal muscles; pain in the stomach; acid or gaseous eructations, and other dyspeptic symptoms; evidences of autointoxication; disturbances of the pulse; usually constipation, but sometimes diarrhea, followed by constipation; relief by enemata found to be inefficient, unless the ileocæcal valve is reached; evidences of dilatation of the lower end of the ileum, of which the most prominent symptom is the presence in the right iliac fossa of a tumor which comes and goes, usually accompanied by colic-like pains, sometimes disappearing with a gurgling sound. General asthenia is usually noted, and in severe cases there is fever and sometimes vomiting. None

of the symptoms mentioned may be obtained in every case, and a large proportion of them may be absent.

The majority of the author's cases have been either subject to stenosis in other parts of the alimentary tract, or have had typhoid fever. The author reports seven cases, in three of which the diagnosis was confirmed by operation. The operation in all three cases was performed through a gridiron incision. An incision three to four inches long was made through the ileocæcal valve in the axis of the small intestine. This incision was sewed up in a transverse direction similar to the Heinecke-Mikulicz pyloroplasty. The benefits of the operation were very marked and have persisted up to the present time.

BACKWARD LUXATION OF THE HIP-JOINT—A NEW METHOD OF REDUCTION.

ELGART (*Centralblatt für Chirurgie,* Aug. 22, 1903) describes a case of backward luxation of the hip-joint in which the ordinary methods of reduction had failed. He thereupon laid the anesthetized patient on the floor and had an assistant fix the pelvis by pressure on the iliac spines. Then, kneeling on one knee, the operator laid the dislocated extremity over his other knee, grasping the patient's ankle with one hand so that the lower leg served as a lever. By making downward pressure on the lower leg, a powerful traction was exerted upon the femur in a vertical direction. Inward rotation of the femur was secured during the above traction by turning the lower leg outward, while with the other hand the operator grasped the prominent luxated head of the femur and pressed it outward in order to facilitate the passage of the same over the lip of the acetabulum. The same object can be obtained in a corpulent individual by making outward traction on the proximal end of the femur. Adduction might also be obtained during this maneuver by the operator bending his knee forward, although this was not necessary in the author's case. Reduction was accomplished at the first attempt by this method. A word of caution might be given in regard to the danger of producing a fracture of the bones of the leg or of the neck of the femur, or of rupturing the capsule of the knee-joint.

SUBCUTANEOUS RUPTURE OF THE BILIARY PASSAGES.

According to HAHN (*Archiv für klinische Chirurgie,* Band 71, Heft 4) subcutaneous rupture of the biliary system results from the same forms of violence as those producing rupture of other intra-abdominal viscera. Gall-stones in the gall-bladder in one case, in the cystic duct in one, in the common duct in two, and adhesions around the gall-bladder in one case, have been noted as predisposing causes in the reported instances.

Rupture of the gall-bladder occurs more frequently than rupture of the bile-ducts. Lacerations of the gall-bladder generally present an irregular outline. In one case the serous coat remained intact and the bile escaped into the retroperitoneal space; in two cases the gall-bladder was torn from the liver. Tears of the bile-ducts usually involve the anterior wall. In five reported cases the common duct was torn asunder.

Rigidity of the abdominal muscles following immediately after rupture of the biliary system would be expected as a prominent symptom, but it never has been reported, probably because the patients have not come under observation sufficiently early. Shock and collapse, pain, localized or diffuse, which may or may not radiate to the right shoulder, pallor, anxious expression, and vomiting, are early symptoms which have been observed. Hemorrhage in uncomplicated cases is insignificant.

The symptoms of shock gradually subside; pain becomes localized in the hypogastric or right hypochondriac region; the patient becomes jaundiced; stools become clay-colored; and the physical signs of an effusion in the abdominal cavity are present.

In cases of laceration of the biliary system, the bile most commonly escapes into the peritoneal cavity, but it may escape into the retroperitoneal space. The amount of bile which escapes depends upon the extent and location of the laceration; 8 liters of bile was obtained by puncture in Landerer's case, and 14 kilogrammes in Uhde's case.

A small amount of bile is absorbed rapidly from the peritoneal cavity without producing peritonitis. The long-continued pouring out of large amounts of bile results in a typical form of peri-

tonitis which probably is produced by chemical irritation. Absorption of bile from the peritoneal cavity ceases after a few weeks, when, if extravasation still continues, the bile tends to accumulate without undergoing any special change. During the stage of absorption the patient presents the signs of cholemic intoxication, and thereafter the symptoms of acholia.

In twenty-eight cases reported by Courvoisier, jaundice was present in ten, being noted in conjunction with clay-colored stools in eight, but was never observed before the third day. Jaundice with normal colored stools is present in cases of rupture of the biliary system in which a portion of the bile flows into the intestine. If none of the bile reaches the intestine, jaundice and clay-colored stools are observed, and are the rule in cases of rupture of the common duct. Jaundice may be absent and clay-colored stools present in cases in which absorption is prevented by encapsulation of the extravasated bile. The presence of bile in the urine is also a variable symptom and was noted in two cases before jaundice appeared.

Enlargement of the abdomen from extravasation of bile was never observed before the third day. There was usually dulness in the right hypochondriac region; rarely the extravasation assumed the form of a free ascites. Frequently large collections of bile could not be diagnosed after the lapse of several weeks, or even months. Constant symptoms of biliary extravasation, which may appear as early as the first week, are rapid emaciation and exhaustion of the patient, due directly to the loss of bile. The reported cases in most instances have been characterized by an afebrile course and great rapidity of pulse rate. The diagnosis of rupture of the biliary passages was usually impossible during the first three or four days, and then at times was made only by exploratory puncture.

Laparotomy with evacuation of the extravasated bile and repair of the rupture offers the best prospect in these cases. Rupture of the gall-bladder should be treated by suturing the laceration, by suturing the gall-bladder wound to the parietal peritoneum, or by excision of the gall-bladder. In cases of injury to the cystic duct the wound should be sutured, or cholecystectomy performed. Rupture of the hepatic duct should be treated by tampon or direct drainage of the duct.

Wounds of the common duct are best treated by suture or tampon. In cases of complete division of the common duct, Courvoisier advises drainage of the hepatic and duodenal portions of the duct through the abdominal wound until sufficient time has elapsed for adhesions to form around the drainage-tubes, in the hope that when the drainage-tubes are removed the bile will again find its way into the intestine. Terrier and Auvray advise double ligation of the common duct and the performance of cholecystenterostomy. Choledochoduodenostomy has also been suggested for this form of injury.

In 1890 Courvoisier collected statistics on thirty-four cases of subcutaneous rupture of the biliary passages, about half of which were treated by repeated punctures to draw off the extravasated bile, with a fatal result in about two-thirds of the total number of cases. The author has collected thirteen cases which have been reported since 1890. Of these four died, in spite of laparotomy, seven recovered after laparotomy, one was cured by puncture, and one recovered spontaneously.

TORTICOLLIS—OPERATIVE TREATMENT.

WULLSTEIN (*Centralblatt für Chirurgie,* Aug. 15, 1903) thinks that the deformity persisting after division of the contracted sternomastoid, in long standing cases of torticollis, is due not only to the bony deformity which has developed, but is also contributed to by an elongation of the opposite sternomastoid. He believes that the best results in severe cases can be obtained without the subsequent use of orthopedic apparatus, by shortening the elongated cleidomastoid, at the time the contracted muscle is divided to an extent equivalent to the difference in length of the two muscles. This is usually from 4 to 8 centimeters in the more pronounced cases. The best place to shorten the muscle is just below the entrance of the spinal accessory nerve. This is accomplished by taking a tuck in the long axis of the muscle, sutures being introduced to hold the fold of muscle in position. Thus no nerve filaments are

cut, and the muscle fibers are not divided. The head is held in a position of overcorrection by means of suitable bandages, until the shortened muscle is firmly united, slight movements being permitted after the twentieth day. The author has treated six cases by this method, and has secured very satisfactory results.

GALL-STONES COMPLICATED BY FISTULA BETWEEN THE PORTAL VEIN AND THE HEPATIC DUCTS.

MONCRIEFF (*Australasian Medical Gazette,* Sept. 21, 1903) reports a case of biliary calculus in which a large stone was found in the common bile-duct. The wall was incised longitudinally over it, and no hemorrhage took place until the stone escaped from the duct. Its escape was followed immediately by a rush of blood, as if coming from a large vein, but it was impossible to locate the exact origin of the bleeding. The hemorrhage was controlled by gauze packing, but within a few hours the movement of the patient displaced the plug, and he died of hemorrhage into the peritoneal cavity.

At autopsy the common duct was found greatly dilated, being about the size of the thumb, with its mucous membrane roughened, and its wall thickened. There was no evidence of any cystic duct; the common duct opened directly into the gall-bladder and then continued on into the hepatic ducts. These ducts were full of dark, clotted blood. At the transverse fissure, where the portal vein was beginning to divide into its branches, was a small discolored patch under the intima of the vessel about one centimeter in diameter, with a small opening with clear-cut edges like the mouth of a vein in the center of this patch.

On introducing a probe it was seen that the intima of the vein was dissected up, and the discoloration was due to blood lying between the intima and the underlying tissue. From this the probe passed on into one of the large hepatic ducts, just at its commencement from the common duct. This was the source of the hemorrhage; the blood had passed directly from the vein into the ducts, and escaped externally when the stone, which acted as a plug, was removed. On section of the liver all the small bile-ducts were seen to be full of blood-clots. The cause for this abnormal communication was not evident.

TRAUMATIC HEMORRHAGE OF THE SPLEEN—SURGICAL TREATMENT.

In discussing the general subject of hemostasis of splenic wounds, SENN (*Journal of the American Medical Association,* Nov. 21, 1903) suggests that no one exclusive method of treatment can be relied on. The treatment to be employed necessarily depends on the location, size, and character of the wound, and the condition of the wounded organ. The surgical treatment of traumatic hemorrhage of the spleen naturally divides itself into (1) splenectomy; (2) partial splenectomy; (3) splenorrhaphy; (4) aseptic tamponade; (5) cauterization; (6) marginal crushing and suturing.

1. *Splenectomy.* Splenectomy is the operation of necessity in the treatment of traumatic hemorrhage of the spleen if the organ itself is diseased, or in case the wound implicates the main trunk of the splenic artery. If the spleen is enlarged or softened, as is the case after acute infectious diseases, or in consequence of chronic malarial intoxication, wounds cause very obstinate bleeding, which owing to the textural changes which have taken place resists all attempts at hemostasis short of splenectomy. In such an event no time should be lost in the employment of conservative measures, and the diseased, wounded organ should be promptly removed. The same treatment is to be followed if the wound involves the hilus of the spleen and its principal artery.

2. *Partial splenectomy.* If the lower part of the spleen has been extensively crushed, or lacerated, or if a transverse wound has divided two-thirds of the diameter of the organ, removal of the injured or partially detached part of the spleen is indicated. The amputation should be done by the use of crushing forceps, and after excision the crushed tissue should be covered with omentum, which is sutured over it with catgut sutures. Suture of the omentum over the stump is an additional means of hemostasis, and prevents harmful visceral adhesions.

3. *Splenorrhaphy.* Suturing as a hem-

ostatic has had a fairly good record and will be resorted to in appropriate cases. The mattress suture or shoemaker's stitch is best adapted to this purpose. A round needle armed with catgut is used. Bleeding from the punctures is reduced to a minimum by using double catgut sutures so as to tampon the tract made by the needle with the suture material, which soon swells by the absorption of moisture. After the hemorrhage has been arrested in this manner the cut surfaces are sutured together with a few catgut sutures. In bullet wounds a circle of through-and-through mattress sutures will usually succeed. The bullet wound itself, in such cases, should always be drained with aseptic gauze. If suturing is decided on, further loss of blood should be prevented by digital compression on the injured part of the spleen until suturing is completed.

4. *Aseptic tamponade.* In the case of wounds of the spleen the aseptic tampon meets with a decided disadvantage in the absence of an adequate resistance to pressure. Notwithstanding the unfavorable mechanical conditions for effective tamponade, this agent has given satisfactory results in many cases of traumatic affections of the spleen. It will prove of value, however, if the hemorrhage is venous or parenchymatous, but should never be relied on if the bleeding is from arteries of any considerable size—that is, in the treatment of arterial hemorrhage. The typical Mikulicz tampon is the one to be employed in this case. The tampon can be removed with ease, and there is no danger of leaving a part of the tampon in the wound. The tampon also serves the useful purpose of a drain, and should be allowed to remain as long as it is considered necessary to continue drainage.

5. *Cauterization* is not reliable, and may inflict serious damage on important adjacent structures. The eschar which it produces interferes seriously with the ideal healing of the visceral wound. For these and other reasons the actual cautery should be resorted to only in exceptional cases as a hemostatic in the treatment of wounds of the spleen.

6. *Marginal crushing of the wound, and suturing.* The most reliable procedure in arresting traumatic hemorrhage of the spleen in all cases in which the wounded organ can be saved is marginal crushing, followed by suturing the wounded margins with catgut. The hemorrhage is arrested the moment the forceps are applied, and the blood-vessels in the crushed tissues are speedily obliterated by thrombosis, thus guarding against recurrence of the bleeding, and by uniting the crushed wound margins by suturing with catgut the visceral wound is placed in the most favorable condition for speedy healing and regeneration of the tissues lost by the injury and the operative treatment of the wound. Too much stress cannot be placed upon the importance of making compression slowly, as rapid compression is liable to tear the fragile tissue instead of compressing it. With two large hemostatic forceps both wound margins are compressed simultaneously, thus controlling the hemorrhage the instant they are applied.

INTESTINAL OBSTRUCTION DUE TO GALL-STONES.

According to MOYNIHAN (*Medical Chronicle,* August, 1903) the obstruction of the intestine by a gall-stone is an infrequent occurrence. Bernard found that in 365 cases operated upon for intestinal obstruction, 8 were examples of gall-stone ileus. The proportion of cases of obstruction due to gall-stones to that due to other forms is said by Fritz to be 1 to 13; by Leichtenstern 1 to 28. The average age of patients is from fifty-five to sixty years; and women are affected five times more frequently than men, the youngest being twenty-seven.

The gall-stone which causes the obstruction may ulcerate through the gall-bladder into the stomach, the duodenum, the jejunum, or the colon. Cystoduodenal fistulæ are more frequent than all other forms of gall-bladder fistulæ. Cases have been recorded in which the blockage of the bowel was caused by concretions, consisting of a gall-stone nucleus and a laminar deposit of intestinal salts.

Of 32 cases quoted by Leichtenstern, the stone was found in the duodenum or jejunum in 10 cases; in the middle ileum in 5 cases; and in the lower part of the ileum in 17 cases.

In rare instances the stone may cause symptoms of obstruction by becoming impacted in the colon or the sigmoid flex-

ure. The obstruction in the majority of cases is due to the actual blocking of the bowel by a calculus. In exceptional instances a volvulus may be due directly or indirectly to the blocking of the intestine by a gall-stone. More rarely the gall-stone by an irritation of its rough surface may induce a spasm of the bowel and thus cause intestinal blocking. The conditions present in a case of gall-stone ileus differ from those present in the more common forms of intestinal obstruction. There is a blocking in the lumen of the bowel, but there is no interference with the circulation.

The symptoms of intestinal obstruction due to gall-stones vary within the widest possible limits. They are more intense and of the greatest urgency in those cases in which the duodenum or the upper part of the jejunum is blocked; they are subdued and of the type present in chronic obstruction when the sigmoid flexure is involved, or, as in a case related by Ord, where the stone is caught in the rectum, just above the internal sphincter. In the majority of cases the stone is impacted in the ileum, and a definite clinical picture can be drawn.

The history of previous attacks of gall-stone colic was obtained in about one-fifth of the recorded cases, but generally there is no mention made of jaundice as one of the symptoms. The stone generally makes its way through the wall of the gall-bladder directly into the duodenum; there is no interference with the passage of the bile, and as a rule there is no colic.

The patient is generally a woman over fifty years of age, of full habit of body; the onset of the symptoms is sudden; pain and slight collapse are observed first, and very speedily vomiting. The vomiting is incessant, copious, and exhausting. It is a most striking feature of the case, the ejected fluid becoming stercoraceous in twenty-four to thirty-six hours; obstruction is often incomplete, fluids or feces being occasionally passed; rarely there is diarrhea. The abdomen as a rule remains soft and flaccid. Variations from this type are at times encountered.

Spontaneous recovery may be anticipated far more frequently in cases of gall-stone ileus than in other forms of intestinal obstruction. At times the symptoms may be acute, the pain incessant, vomiting most distressing, until a moment when, quite suddenly, ease is experienced and recovery is assured.

Naunyn considers that over 50 per cent of the patients recover under expectant treatment. Fitz collected notes on twenty-three cases of gall-stone obstruction; twelve were treated medically, of whom eight recovered; and eleven surgically, of whom two recovered. The passage of the gall-stone in those cases which recovered occurred on the fourth, fifth, tenth, fourteenth, fifteenth, seventeenth, and twentieth day.

In view of previous statistics many authors advise the expectant rather than the surgical treatment for these cases. It is certain, however, that the best results would be obtained if a series of cases could be treated upon the ordinary principles now governing the treatment of all forms of intestinal obstruction: operation at the earliest possible moment after the diagnosis of acute obstruction has been made. If a sure diagnosis of gall-stone obstruction could be made, a delay of two or three days during which medical treatment was being tried would, in some cases, permit of the passage of the stone. There are, however, very few cases recorded in which the stone was passed before the fourth day.

If medical treatment be advised it will consist chiefly of withholding food by the mouth, in the administration of nutrient enemata once daily, and the injection of morphine and atropine subcutaneously. The constant vomiting may be relieved by occasional lavage.

If operation be advised, an incision just large enough to admit the hand is made between the symphysis and the pubes. When the peritoneum is opened the terminal portion of the ileum is sought. This probably will be found collapsed. The empty gut is passed rapidly through the fingers until the stone is met. The loop containing the stone is withdrawn from the abdomen, clamped above and below, and nipped by the assistant's fingers. The stone is then removed by an incision through the intestinal wall. If the bowel below the stone be very empty and narrow, the stone may be displaced upward two or three inches into a distended portion of the gut, to make the subsequent suture of the bowel easier. The stone

being extracted, the wound is closed by two layers of continuous sutures, the bowel replaced, and the operation completed in the usual manner. The whole operation need not occupy more than twenty or thirty minutes. The shock is therefore slight, the peritoneal handling trivial, and the exposure of the intestine of the briefest.

COMBINED CHOLECYSTENTEROSTOMY WITH ENTEROENTEROSTOMY.

MARAGLIANO (*Centralblatt für Chirurgie,* No. 35, 1903) reports a method which Krause has employed for several years with a view to preventing infection of the gall-passages subsequent to a cholecystenterostomy. He performs a wide enteroenterostomy between the efferent and afferent limbs of the loop of the intestine which has been employed for the cholecystenterostomy. The danger which is present to a certain extent when the opening is made between the gall-bladder and the duodenum is greatly increased in the cases in which the existing adhesions present such operative difficulties that a fistula must be made between the gall-bladder and the jejunum. Cases of severe infection of the gall-passages after cholecystenterostomy have been reported by a number of observers. This danger is overcome by the performance of enteroenterostomy. The intestinal anastomosis short-circuits the fecal current, and reduces to a minimum the amount of fecal contents which come in contact with the gall-bladder opening. Backward pressure of the gall-passages and stasis of the bile are likewise prevented.

ABSCESS OF THE EPIPLOIC APPENDAGE CAUSED BY PERFORATION OF THE COLON.

It is clear after a consideration of the normal anatomy of the colon that there are portions of its circumference where a sharp foreign body could penetrate and escape into the peritoneal cavity, and the thinner and more emaciated the person, the greater is the arc of the gut which would allow the penetration of the foreign body. In a fat person, on the other hand, although there is a short arc where it could be perforated, there is a far greater extent of its circumference protected by fat, into which the escaping body would more probably find its way; and in a certain proportion of cases the penetrating body would lodge in an adjacent epiploic appendage. The fatter the patient the less likely is the foreign body to penetrate into the peritoneal cavity, and the greater is its chance of entering an epiploic appendage.

BLAND-SUTTON (*Lancet,* Oct. 24, 1903) reports two cases which prove that foreign bodies from the colon may lodge in the epiploic appendages, and shows some of the consequences which arise therefrom.

The first patient was a man aged forty years, who had acute pain in the left iliac region, accompanied by some local swelling, tenderness, and fever. The signs were such that if they had occurred in the right instead of the left iliac region, the diagnosis of acute appendicitis would have been incontestable. Upon opening the abdomen there was found an ovoid body as large as a bantam's egg, and quite as smooth, and sessile to the ascending colon. This lump was split open longitudinally, and in its center was found a distinctly circumscribed cavity, communicating with the lumen of the colon by a narrow passage. Inspissated fecal matter filled the cavity, and in its midst was detected a sharp foreign body. The anterior and posterior halves of the epiploic appendage were secured with silk sutures to the peritoneal edges of the wound, and after inserting a drainage-tube into the feces-containing cavity, the incision was brought together with interrupted sutures. About the fourth day fecal matter escaped freely from the wound. This continued until the tenth day, and then the sinus slowly granulated.

The second patient was a woman sixty years of age who suffered from symptoms of chronic intestinal obstruction, associated with a defined, tender, painful lump, the size of a bantam's egg, in the left iliac fossa. The age of the patient, the situation and mobility of the lump, in conjunction with liquid feces from the anus, led to the diagnosis of cancer of the descending colon. By incision through the left semilunaris an oval body was exposed on the sigmoid flexure of the colon. Its hardness suggested malignancy. The adjacent walls of the gut were very thick

and infiltrated, so that a wide colectomy was decided upon, and the cut ends of the colon were secured separately in the abdominal incision.

The resected portion of the colon was bisected, and in the middle of the suspected cancerous growth a lump was found, a smooth, round, ball-like body lodged in a smooth-walled cavity communicating with the mucous surface of the bowel by a narrow tubular channel. The globular body in the cavity had a fragment of straw for a nucleus.

The very large size of an epiploic appendage which contains a foreign body is in a large measure due to the deposit of lymph on its periphery, its subsequent organization providing for it a stout and firm capsule. From a study of an abscess in the epiploic appendage the author believes there can be no reasonable doubt that in some instances, at least, the cause of tumors of the abdomen which appear inoperable during exploratory laparotomy, and which later disappear spontaneously, is a minute foreign body, which has perforated the cæcum, the colon, the sigmoid flexure, or the rectum.

OSTEOPLASTY OF THE SKULL.

KAYSER (*Deutsche Zeitschrift für Chirurgie,* October, 1903) reports a case of compound comminuted fracture of the skull in which he successfully employed portions of the inner table for the purpose of closing partially the defect in the skull, and preventing prolapse of brain tissue through the lacerated meninges.

The author presents the following conclusions in regard to this form of osteoplasty:

1. An attempt should be made in most cases of traumatic defects of the skull to close the defect by implantation of the splintered fragments.

2. The fragments from the inner table of the skull are especially adapted for this purpose, because of their large size and smooth inner surface.

3. The fragments from the inner table should be secured in position by turning them in such a way that the ends of the fragment become wedged in the diploe. This fixation prevents pressure on the brain, which might occur if the fragments were loose, and at the same time favors healing.

4. The method does not possess any disadvantages and does not complicate the performance of a secondary plastic operation.

5. The operation should be performed shortly after receipt of the injury.

6. In cases of extensive destruction of the meninges, and injury to the brain tissue, a distinct advantage of this method over other forms of plastic operations is the fact that the osseous defect may be closed immediately.

BIMANUAL MASSAGE OF THE HEART FOR COLLAPSE FOLLOWING CHLOROFORM NARCOSIS.

COHEN (*Journal of the American Medical Association,* Nov. 7, 1903) reports the case of a woman aged thirty-two years who was operated upon under chloroform anesthesia for adherent ovarian cyst. Fifteen minutes after the commencement of the operation the patient, without any previous respiratory, circulatory, or pupilary symptoms, suddenly became cyanotic and pulseless; cessation of respiration in this case following and not preceding that of the heart. Artificial respiration was then resorted to and continued, and the usual hypodermics administered. After two minutes had elapsed and no reaction had been established, the operator introduced his left hand into the abdominal cavity, pushed it along the anterior abdominal wall until the diaphragm was reached, then turning the hand, palm upward, easily grasped the heart through the relaxed and intervening diaphragm. There was an entire absence of heart action. After placing the right hand over the precordial region externally, bimanual rhythmical compression of the heart was performed at the rate of about sixty times a minute. After thirty seconds a slight beat was felt by the left hand. The heart then began slowly to beat, gradually increasing both in strength and rapidity of beat, until after the end of one minute the beats registered about eighty to the minute, and respiration was partially reëstablished. About two minutes later respiration was normal, pulse 80.

The shock being apparently recovered from, the anesthetic was changed to ether, and the operation finished in about thirty minutes. At the completion of the opera-

tion the patient was in good condition, pulse being 86 and respiration about normal. Consciousness returned in about the usual length of time.

HALLUX VALGUS.

SHELDON (*Medical Record,* Oct. 31, 1903) believes (*a*) that an imperfectly fitting shoe is never the cause of hallux valgus; (*b*) that hallux valgus in the majority of cases occurs in feet so formed as to predispose to the condition; (*c*) that the extensor proprius pollicis muscle plays a most important rôle in causing and aggravating the condition; and (*d*) that osseous changes on the inner side of the distal end of the metatarsal bone are commonly found in severe cases.

All the cases of hallux valgus which the author has examined have occurred in patients whose feet were of one type: instep high, the arch of the foot well formed, the extensor tendons of the great toe prominent at the metatarsophalangeal joint; the first phalanges of the joint extended and the distal phalanges flexed.

The author has never seen a case of hallux valgus in a patient afflicted with flatfoot. He has operated upon thirty cases, in all of which there was a subluxation of the first metatarsophalangeal joint and some change in the inner side of the distal end of the metatarsal bone. In some cases there was marked hypertrophy. He has never seen any changes present in the phalanx nor in the outer side of the distal end of the first metatarsal bone.

Mechanical appliances appear to be practically useless. Resection of the metatarsophalangeal joint is an unnecessarily severe operation. Six beginning cases were treated by lengthening the tendons of the extensor proprius pollicis and extensor brevis digitorum for one inch. The toe remained in proper position and the power of extension was present. The results were satisfactory, but can be recommended only in mild cases.

Twelve cases were operated upon by a method recommended by Dawbarn, the head of the metatarsal bone being resected with a Gigli saw without injuring the tendons or the sesamoid bones. The space occupied by the resected bone fills with blood and heals by the blood-clot process. The results were quite satisfactory in ten of the twelve cases. In one infection occurred; the joint was stiff, but was not painful or tender. In the other patient the wound healing was perfect, but the joint remained tender and was painful at times. In all of these cases the toe was somewhat shortened.

In all well marked cases of hallux valgus the following procedure is recommended: If a tender bursa be present, it and as much of the overlying skin as is compatible with the complete closure of the wound are excised. The inner portion of the distal end of the first metatarsal bone is exposed by means of a chisel or periosteotome. The inner one-half or two-thirds of the head of the bone is removed with bone forceps, and the extensor tendons of the great toe are divided. The fascia and ligaments are drawn together with catgut and the skin approximated with silkworm-gut. The toe is held in proper position with a plantar splint and adhesive plaster. If an infected bursa is present it requires excision and complete healing of the wound before performing the radical operation.

In all twelve cases operated upon by this method the result was perfect within two or four weeks, the toe being in proper position and not shortened, the joint freely movable, and not painful or tender. One toe became infected, but this produced no bad results.

CIRRHOSIS OF THE LIVER—TALMA'S OPERATION.

HARRIS (*Journal of the American Medical Association,* Oct. 31, 1903) reports four cases, which in addition to two previously reported make a total of six cases of cirrhosis of the liver, in which he has performed Talma's operation.

Five of the patients died within a month after operation, and one was alive but without improvement five months after the operation. The five cases that died were undoubted cases of alcoholic cirrhosis. The surviving case was in all probability due to syphilis. All of the cases were far advanced when operation was undertaken, and in two of the cases, in addition to omental fixation, cholecystostomy was performed in order to drain

the gall-tracts to relieve the so-called cholemic symptoms. Death followed in one of the cases in a few days. In the other some improvement occurred for a few weeks, and then the patient suddenly died.

One patient was tapped three times in three weeks, after which the abdomen did not refill for three years, during which time the patient felt fairly well. The improvement in this case was probably due to extensive adhesions which were found at the operation between the omentum, liver, and abdominal parietes, and which had formed evidently at the time of the first tappings, and the collateral circulation which resulted was sufficient to prevent the reaccumulation of the fluid for some time.

The author believes that congestion of the portal radicals is not the sole cause of ascites, and that the changes in the peritoneum of a chronic inflammatory nature are instrumental in its production, particularly during the terminal stages. The fact that the fluid taken from the abdomen was hypertonic in two cases, as shown by its crenating effect on freshly drawn blood from the same patient, is another evidence of the inflammatory character of the fluid. The writer is of the opinion that the benefit to be derived from Talma's operation in alcoholic cirrhosis, even under favorable conditions, is but temporary. In order to obtain the full benefits of the operation it should be performed at the first appearance of the ascites.

In the cases showing jaundice, or symptoms of cholemia, cholecystostomy should be performed at the same time.

WOUND SCARLET FEVER.

Within six months GERASSIMOWITSCH (quoted in the *Centralblatt für Chirurgie*, Oct. 17, 1903) observed eleven cases of wound scarlet fever. He thus summarizes his conclusions regarding the character of the affection:

Operative cases have a special predisposition to scarlet fever. Infection occurs at the time of injury or operation, and apparently gains its entrance through the wound. The clinical picture is characteristic. The incubation period is generally shortened (usually four days); the prodromal fever is present, and occurs as a sudden elevation of the temperature shortly before the appearance of the eruption, as commonly seen in scarlet fever; or frequently there is a gradual elevation of temperature during three or four days. The eruption begins around the wound and extends from this point. The wound pursues a complicated course, and generally there is long-continued suppuration. There is absence of throat symptoms. The disease is usually mild.

Of the eleven cases one died from empyema. Scarlet fever is a wound disease in children comparable to erysipelas or tetanus. Many cases of scarlatinoid exanthems following injection of serum in diphtheria are really cases of pure wound scarlet fever.

ANKYLOSIS OF THE LOWER JAW—OPERATIVE TREATMENT.

KUSNETSKI (*Centralblatt für Chirurgie*, Oct. 17, 1903) reports two cases of ankylosis of the lower jaw in which he removed a section of bone one centimeter in length from the middle of the ascending ramus of the lower jaw, and implanted a muscular flap from the masseter muscle between the ends of the resected bone. The first patient was a seven-year-old child in whom ankylosis developed four years previously, after an attack of scarlet fever and otitis media, and the second patient was a woman thirty years old in whom the ankylosis developed after an attack of typhoid fever, complicated by inflammation of the joint twenty years previously.

After operation the child could open his mouth to an extent of 1.75 centimeters, and the woman to 2.5 centimeters. These two cases, taken in conjunction with ten reported by Schmidt, prove the usefulness of this method.

URETHRAL CARUNCLE—PALLIATIVE TREATMENT.

DENDLE (*West London Medical Journal*, October, 1903) reports a case of large caruncle which extended for quite half an inch into the urethra. The patient was treated twice weekly by an application of tampons wet with 1:1000 solution of adrenalin chloride, containing five per

cent cocaine. Within a short time the pain ceased and the growth was much smaller. The occasional use of the application so completely prevents discomfort that the patient declines to consider the question of operation. According to the author's experience it seems almost impossible to eradicate large caruncles extending into the urethra without risk of incontinence. On the other hand, if removal is not complete recurrence is sure to set in at an early date. The author has had nine cases of urethral caruncle under observation, and considers the result of this palliative treatment most favorable compared with surgical treatment employed in eight of the cases.

VESICOINTESTINAL FISTULA.

HUBBARD (*Boston Medical and Surgical Journal,* Oct. 8, 1903) reports a case of vesicointestinal fistula without evidences of carcinoma or tuberculosis of the inflammatory type, with a stone of apparently secondary origin. Operation was followed by a fatal termination.

Vesicointestinal fistulæ occur more often in men than in women, 75 per cent of the cases being found in men, and 25 per cent in women. This is due in part to the difference in the anatomical relation of the bladder in the two sexes, and in part to the greater liability of men to trauma—many of the reported cases having been due to gunshot wounds and sword-thrusts. The immediate cause of the fistula may occur in either the bladder or the intestine, or outside of both. The causes of the non-traumatic cases are cancer, tuberculosis, and non-traumatic inflammation; the last class being due to a great variety of diseases—cysts, periostitis, vesical calculus, toxic enteritis, typhoid, dysentery, appendicitis, intestinal obstruction, stricture of the intestine, syphilis, and actinomycosis. The simple inflammatory lesions cause the greater number of fistulæ—30.52 per cent of ninety-five cases analyzed by Chavannaz. Tubercular inflammation with its primary focus in the intestine or the prostate, or less commonly in the bladder or seminal vesicles, furnishes 7.36 per cent; and cancer, originating usually in the rectum, 20 per cent. Paschal found the cause of the cases analyzed primary in the bladder in 18 per cent, and in the intestine in 35 per cent. The cases are fairly evenly distributed over early adult life and old age.

In but 5 cases out of 95 were there several openings in the bladder. In 100 cases tabulated by Paschal, the orifice in the bladder was situated on the anterior face in one case; on the side, 9 times; on the summit, 13; in the base, 17; and on the posterior surface 23 times, 19 of which were near the ureters. Of 195 cases the connection was with the rectum in 113; with the colon, and especially the sigmoid, in 42; and with the ileum 26 times.

The opening of the fistula may form a valve which prevents the passage of material in one direction. The bladder itself is usually diminished in size, and eventually with the urethra becomes chronically inflamed, though it may withstand for a surprisingly long time the presence of the fecal matter. Infection ascending through the ureters and to the kidneys is rare. Secondary stones may form in the bladder about a nucleus of fecal matter, and be composed largely of fecal material, or of phosphates. The intestine below the fistula becomes inflamed and irritable from the presence of the urine, or the rectum may dilate and form a pouch in which the urine collects, only to be passed at intervals.

It would seem that the diagnosis of the connection between the bladder and the intestine could be made from the presence of any one of the three characteristic symptoms—gas or fecal matter in the urine, and urine in the stools. Other conditions, however, may give rise to some of the above symptoms. Gas may appear in the urine after catheterization, or litholapaxy; it is developed sometimes in diabetes mellitus when a yeast fungus reaches the urine in the bladder and starts up fermentation. It may occur also when purulent cavities with gaseous contents develop near the bladder and break into it. Pneumaturia occurs without any reason in certain neuropathies (Guirard).

The presence of fecal matter in the urine is proof of the existence of a fistula within the intestinal tract. It may connect, however, with the urinary apparatus below the bladder. In a urethrorectal fistula there will be anal urination only at

the time when urine is passed through the urethra, but physical examination will settle the question. Urine in the rectum other than that due to a vesicointestinal or a urethrorectal fistula may occur in a ureterointestinal fistula. The differential diagnosis may be made by absence of fecal matter in the urine, and by a physical examination. Cases of neoplasms and tuberculosis which give rise to this condition must be so far advanced as to make other diagnosis easy.

As the simple inflammatory fistulæ are the most favorable for treatment, an early diagnosis is important. The examination of the bladder and rectum is made by cystoscope and proctoscope. The injection of a colored fluid into the rectum and its recovery through the bladder is sure proof of the presence of a fistula. A negative result from the injection one way does not rule out the fistula.

Palliative treatment is devoted to keeping the bladder and the rectum clean by frequent irrigations, by permanent drainage, or in some cases by the position of the patient. In order to prevent the passage of feces into the bladder, an artificial anus may be formed above the intestinal end of the fistula. Vesicointestinal fistulæ, from the standpoint of their radical cure, are divided clinically into those accessible from the rectum, or vesicorectal; and those inaccessible, or vesicointestinal, even though the fistula connects anatomically with the upper part of the rectum.

Various procedures have been suggested for the radical cure, the most important of which are the following:

Rectal route. The anus is stretched, and the edges of the fistula from the inside of the rectum are freshened and sutured in layers. Division of the sphincter insures free discharge of feces and lessens the likelihood of the stitches tearing.

Perineal route. Transverse incision in the perineum. The rectum is separated from the bladder and urethra in front; the peritoneum is pushed up out of the way if the fistula is high, and the fistula directly sutured. Drainage is advisable. At the end of the operation the rectum should be turned a little so that the repaired opening in the bladder may come against the healthy wall.

Sacral route. Incision is made from the anus along the side of the coccyx and cæcum, and the bone flap turned back. The fistula may reach up, pulling the rectum to one side.

Vesical route. The fistula may be attacked through a suprapubic incision into the bladder. The mechanical difficulties by this route are great.

Abdominal route. Separation of the intestine from the bladder and direct repair of the opening in each. Drainage.

Paschal gives the following result: Rectal or perineal route, with or without sphincterotomy, 14 cases; healing of the fistula in 8, failure in 6. Laparotomy in 17; 9 failures, 7 recoveries, and 1 improvement. The causes of death in the fatal cases were peritonitis and shock.

TERMINAL SYPHILIS AND TABES.

The interesting statement is made by DOUGHERTY (*Medical Record,* Nov. 14, 1903) that in its earlier stages tabes is five times out of ten wrongly diagnosticated, and argument is presented in favor of the theory that the origin of the disease is syphilitic.

A study of syphilitic phenomena in general warrants the assumption that syphilis is a disease of extremely slow evolution. The syphilitic virus, or whatever the infective agent may be, undergoes in the body as time advances transformation, which endows it with the power of initiating in the organism structural changes, corresponding to a more or less definite period in the evolutionary cycle of the virus; the ultimate product of its activity being represented in the so-called parasyphilitic affection, or, as Dougherty prefers to designate them, terminal syphilitic affections. Of these the principal examples are met with in the central nervous system, namely, locomotor ataxia and general paresis.

Alcohol, sexual excesses, and the strenuous life occupy an important rôle in the etiology of tabes only in so far as they cause a depreciation of vitality in the neuron, which permits the poisons engendered by the luetic infection to attack it with increased virulence.

There are many reported cases of tabes seemingly due to trauma, but the number without a coexisting syphilitic history is exceedingly small, so that one is forced to the conclusion that the rôle (if any) as-

sumed by trauma in the etiology of locomotor ataxia is similar to that of alcohol and other depressing agencies.

As the leison of tabes is primarily one of the posterior columns of the cord or of the peripheral sensory neuron, it follows that the symptoms presenting themselves should be those caused by irritation in these tracts. This is what occurs, and in the vast majority of cases pain or paresthesia, involving usually the legs, is complained of first. The paresthesia, which the patients most often describe as numbness, but which may be any perversion of sensation, is confined to a limited portion of one foot or leg, or may involve the body from the waist down, or more rarely is confined to portions higher up, as the hand or arm; when occurring around the waist it is often referred to as the girdle symptom. The pain may be shooting, lightning-like, or dull in character; it is usually intermittent, and seems often to be aggravated by damp weather. It is at this period that patients consult the family physician, and it is at this period that the diagnosis "rheumatism" is often made.

Occasionally one of the earliest and most distressing symptoms is paroxysms of coughing or retching and vomiting, with gastric pains, and probably diarrhea, constituting respectively the laryngeal and gastric crises. In a limited number of cases diplopia will be the first symptom complained of. Disturbance of the urogenital system is usually an early sign, and may manifest itself in incontinence or retention of urine, or in some interference of the sexual function—as diminished desire, capacity, or complete impotency. The bowels are apt to be constipated. Any of these symptoms alone, or in combination, may continue for months or years without change; then there will be added to them some disturbance of locomotion, such as difficulty in going up or down stairs, or of walking in the dark, or a tendency to fall, especially on turning corners; or, as in the case of commuters when running to catch a train, a giving way at the knees, this being due to muscular hypotonia. Muscular hypotonia is therefore often a valuable sign in early tabes.

As the disease advances the patient experiences difficulty in walking under any condition, and soon develops the gait and posture so characteristic of the disease; the eyes are kept on the ground, the body bent slightly forward, the legs lifted forcibly, and the feet brought sharply to the ground, heels first. After several years in this condition, unless properly treated, the patient loses entirely the power of walking, and becomes bedridden, where he may remain for many years, finally dying of some intercurrent disease.

When, therefore, a patient presents himself complaining of any of the symptoms above enumerated, it is incumbent upon the consultant to institute so thorough an examination of his patient that the signs of tabes, if present, will be revealed. With that end in view the patient's entire clothing should be removed.

Note if there is any ataxia of station, so-called Romberg sign, consisting of swaying of the body when the eyes are closed and the feet in apposition. Observe if there is any ataxia of the upper or lower extremities; examine knee-jerks and Achilles jerks—the latter may be the first to disappear, and the former disappear early except in high tabes, or are only brought out slightly on reënforcement. The pupils may be unequal in size, but are more apt to be equal and small, and in the early stages they may respond sluggishly to light, but later they lose this power, but usually continue to react to accommodation—the so-called Argyll-Robertson pupil.

Objective sensory disturbances are nearly always early signs in tabes and may appear in the form of a small area of complete or partial analgesia, often found on the outer side of the leg. There may be areas of anesthesia, or the sensations may simply be delayed in transmission. Areas of hyperesthesia are common, especially in the very early stages.

When the tabetic consults a physician because of paresthesia, pain, loss of sexual desire, or other symptoms of similar significance, he is likely to have physical signs that are characteristic of the disease, and of these the most important are loss of the knee and Achilles jerks and the presence of the Argyll-Robertson pupil. There are cases in which these important signs are reversed.

There should be suspicions of tabes at once if a patient presents himself for examination giving a history of syphilis, the disease having been contracted six to

twelve or more years before; and complaining of paresthesia or pains, especially in the legs, or of diplopia or any disturbance of the urogenital or gastrointestinal systems.

Difficulty in locomotion, as a rule, does not belong to an early period of the disease.

Tabes in its various stages is to be distinguished from chronic myelitis, multiple neuritis, spinal tumor, spinal syphilis, general paresis, Friedrich's ataxia, hysteria, and neurasthenia.

As regards cure it is practically hopeless, although under proper treatment and régime the patient may live anywhere from ten to thirty years, and his usefulness as a unit of society need not be particularly curtailed. In the so-called cervical tabes, which fortunately is quite rare, death is likely to occur early, owing to implication of important centers in the medulla.

When tabes has developed, the treatment consists in placing the patient under conditions that will guarantee him immunity from physical and mental strain and excesses of all kinds. He should so far as possible guard against inducing leg weariness, as this tends to aggravate the disease. As general tonic agents, fresh air and hydrotherapy are of service.

For the ataxia which is so distressing a symptom when the disease is well developed, the Fränkel movements are of great service, and if properly carried out the benefit derived is often very gratifying. Electricity is used very extensively in the treatment of this disease, but it practically does no good other than to maintain the nutrition of the muscles, and for this purpose it is inferior to massage. The static spark and the high-frequency currents often seem to relieve the paresthesia and pain. The use of electricity also gives the patient confidence that something is being done for him, and in this way tends to mitigate distressing mental symptoms. The galvanic current is useful in some cases, and should be applied with the positive pole over the chest and the negative along the spine every day, or every other day, and long enough to induce a hyperemia. A current of from ten to fifteen milliamperes is sufficient, but as the patients are often wholly or partially anesthetic, they will endure a much stronger current without complaining. This, however, should not be given them.

Drugs are of little service, if any, aside from their action as general tonics, and for this purpose strychnine, potassium iodide in small doses, and the organic preparations of iron are good. Nitrate of silver is seldom used now, because the benefit derived, if any, is offset by the discoloration it produces in the skin.

As has been said before, antisyphilitic medication *per se* is valueless in tabes; in fact, it is contraindicated, as it is likely to disturb digestion and lower the resistive power of the individual. If the symptoms of tabes, however, should develop within five years after luetic infection, or if there is any evidence of exudative syphilis in the individual, the patient should be placed upon antisyphilitic medication, in view of a probable spinal lues, or in other words, tertiary syphilis, that resembles tabes or terminal syphilis, to which the term pseudotabes is applied.

FRACTURE OF THE PATELLA.

MULLER (*Archiv für klinische Chirurgie,* Band 70, Heft 3) presents statistics on 15 cases of fracture of the patella. Indirect violence due to muscular action was the sole cause of fracture in 7 cases, and played a more or less prominent part in the remaining ones. The fracture was transverse in 13 cases, crucial in 1, and irregular in 1. Eleven cases were treated by bandaging or splinting, and 4 by wiring the fragments.

For statistical purposes the author recognizes a period of primary treatment, which was expended in securing bony union, and a period of secondary treatment, which was employed in restoring the function of the part. In the 11 non-operative cases the average duration of the primary treatment was 98.7 days, and the secondary treatment 71 days. Of the 4 operative cases the average duration of the primary treatment was 93.1 days, and the secondary treatment 125 days.

In six of the non-operative cases, and in one of the operative cases, there was more or less diastasis of the fragments at the end of treatment. In none of the 13 cases was there complete restoration of motion in the knee-joint. The normal range of motion in the knee-joint is represented by an angle of 150 degrees. In

the non-operative cases the average range of motion following a primary treatment was 56.4 degrees; and following a secondary treatment was 120 degrees. In the operative cases the average range of motion after the primary treatment was 51.5 degrees, and after secondary treatment 90 degrees.

BANTI'S DISEASE—SPLENECTOMY.

The number of cases of splenic anemia, or Banti's disease, which have been treated by splenectomy prove, says LEVISON (*Annals of Surgery,* November, 1903), how much can be accomplished in these affections by surgical measures, for if not so treated the disease usually terminates fatally. The surgical treatment has improved to such an extent within the last ten years that the mortality is 18.9 per cent against 42.2 per cent, the latter being the mortality before 1890.

As the result of improper selection of cases, however, the mortality in splenectomy has been materially increased, hence a proper diagnosis is of the utmost importance.

The attention of the patient is often attracted to a tumor in the left side, which may be the first indication. Nausea, vomiting, epistaxis, profuse and protracted diarrhea frequently occur; when the tumor increases in size the patient complains of dragging sensation in the side. Very few, however, experience any pain. Frequently there is bronzing of the skin (melanoderma), such being present in about 60 per cent of cases reported by Osler. This pigment disappears, according to Harris, subsequent to a splenectomy for splenic anemia. There is no lymphatic involvement, which differentiates it from Hodgkin's disease. The liver may or may not be enlarged. Edema and ascites may develop. Hemorrhages are very frequent, death at times resulting from profuse bleedings or exhaustion.

The blood findings are fairly constant—reds about 3,500,000; a low color index showing a diminution of hemoglobin disproportionate to the number of red blood cells (secondary anemia of the chlorotic type). In the greater number of cases leucopenia is present, generally below 5000. There are no nucleated red cells, nor does the differential count reveal anything of significance. No myelocytes, excluding leukemia. In several of Osler's cases ascites was present.

The case reported by Levison presents several points of interest. A summary of the striking features would include: (1) a long period of personal observation; (2) infectious appendicitis preceding the invasion of the disease; (3) intervals of perfect health interrupted by profuse bleedings; (4) typical blood findings; (5) exacerbation of temperature and the accompanying leucocytosis, both indicating some form of infection; (6) slate-colored stools and diarrhea; (7) severe pains between the shoulder-blades, requiring enormous quantities of morphine; (8) disappearance of distended abdominal and chest veins, followed by the spontaneous disappearance of the ascites; (9) splenectomy followed by a rapid increase in the percentage of hemoglobin; (10) appearance of normoblasts and the megaloblasts in the blood subsequent to the splenectomy; (11) rapid regeneration of a very abnormal blood; (12) disappearance of the melanoderma following the operation; and (13) thrombosis of the right innominate subclavian and internal jugular vein, and the recovery of the patient from the same.

The gravity of the operation increases *pari passu* with the size of the spleen.

In the one case spoken of here, under chloroform narcosis, an incision was made in the left semilunar line extending from the left costal angle to the level of the navel. The spleen was readily exposed and palpated in its entirety. Diaphragmatic adhesions were absent, but the splenodiaphragmatic ligament was readily felt connecting the organ to the diaphragm. Great difficulty was experienced in delivering the spleen on account of the shortness of the pedicle, which consisted of the peritoneal fold, including the splenic vessels, constituting the gastrosplenic ligament. The first attempt at ligation was followed by an alarming hemorrhage due to the tearing of one of the large splenic sinuses; the hemorrhage could only be controlled after the spleen had been delivered, which became possible when the ligament extending to the diaphragm was tied off. This permitted the delivery of the upper end of the organ, after which the entire spleen was lifted out and turned from left to right, the pedicle being exposed from

below. It was necessary, however, to enlarge the incision, by making a supplementary incision extending from the middle of the vertical incision horizontally to the left for a distance of about three inches. The pedicle was ligated in sections, tied double, and cut between; extra ligatures were applied to the individual vessels to avert secondary hemorrhage; chromic gut was used. The vessels of the greater omentum were enormously enlarged, but were not interfered with on account of the necessity of maintaining a collateral circulation, possibly obviating a recurrence of ascites. There was considerable hemorrhage from oozing low down from the diaphragm, near the spinal column. This was controlled by gauze packing, which was allowed to remain thirty-six hours. No shock from the operation, notwithstanding the fact that there was considerable loss of blood. Color good when removed from the table. Duration of operation, one and one-half hours, most of the time being lost in controlling oozing.

Reviews.

BIOGRAPHIC CLINICS. Volume II. By George M. Gould, M.D.
Philadelphia: P. Blakiston's Son & Co., 1904.

This small octavo volume, the second one published by Dr. Gould upon this subject, deals with the origin of the ill health of George Eliot, George Henry Lewes, Wagner, Parkman, Jane Welch Carlyle, Spencer, Whittier, Margaret Fuller Ossoli, and Nietzsche. The contents of this volume we believe have already been published in a number of medical journals, so that this is practically a reprint of previously published papers. In looking over its pages we are, on the one hand, filled with admiration for the truly extraordinary literary activity which characterizes Dr. Gould, and on the other hand we cannot help feeling that it is to a large extent misspent energy. It has now come to be universally recognized that eye-strain causes headache, and that it may result in perverted functions in other organs in the body. It may be necessary at times in order to impress this fact sufficiently upon the profession, and the public, to again call attention to it, and to cite instances in which violent headache and other symptoms have arisen from eye-strain, and then been cured by the proper adjustment of glasses. But surely an endeavor to prove that most of the great literary lights which we are wont to worship owed all their abnormalities in health to strained eyes is needless exaggeration. No one can deny that in many instances their health was anything but good. But there is certainly not a very large amount of evidence to prove that its impairment was ocular. Lack of proper exercise and a hundred other influences must be taken into consideration in cases of this kind, and these have been ignored. How do we know that their irritability of temper or attacks of pain were not the result of other functional or organic lesions?

The volume closes by an appendix which is entitled "68 Reasons why Glasses did not Give Relief," reminding us a little bit of the advertisement on the fences of "57 varieties of pickles," or "58 reasons why so-and-so's pianos are the best." We wish that Dr. Gould's energies and extraordinary working powers could be diverted in the direction of original research, and that he would wander in the green fields of original work rather than toil, to use the expression of a well known physician, "in the barren moor" of the supposititious ills of great men.

INFANT FEEDING IN ITS RELATION TO HEALTH AND DISEASE. By Louis Fischer, M.D. Third Edition. Price, $1.50.
Philadelphia: The F. A. Davis Company, 1903.

Dr. Fischer's book contains 300 pages devoted chiefly to the subject it bears upon its title page. In addition to chapters on the capacity of the stomach, the digestive ferments, and the relative advantages of breast and bottle feeding, there are additional chapters dealing with colic, constipation, rickets, scurvy, dentition, marasmus, and summer complaint, and finally a list of references which he has consulted in the preparation of this volume. In a considerable number of instances the text does not consist so much in an expression of the views of the writer as in the quotation of the opinions of other clinicians. In other words, a good part of the book is quoted. This

results in the presentation of what might be called an epitome of our knowledge of infant feeding. To those who are desirous of obtaining an exhaustive and complete work on this subject, the book can be most highly recommended, for it is based upon clinical experience and a complete knowledge of the literature of the subject.

SOCIAL DISEASES AND MARRIAGE: OR SOCIAL PROPHYLAXIS. By Prince A. Morrow, A.M., M.D.
Philadelphia: Lea Brothers & Co., 1904.

We are glad that this valuable contribution to this somewhat delicate subject has been made by one so competent to deal with it as Dr. Morrow. There are few questions which come before medical men for decision which require greater tact than those which deal with the questions connected with what has been called the "social evil." Not infrequently the opinion of the physician in such matters must be controlled not only by his knowledge of medicine, but also by his knowledge of the individuals involved and of the law which has been promulgated for the control of such conditions. We have every reason to believe that the present book will have a large sale amongst both the legal and medical professions. Part I deals with the relation of marriage and venereal disease; medical secrets; the significance of gonorrhea and syphilis as social dangers; the risks to the offspring; and the effects of the various types of gonorrhea. The chapters in Part II deal with the relations of syphilis and marriage. Part III deals with Social Prophylaxis, and the educational, administrative, and sanitary measures for the control of venereal disease.

SUBJECTIVE SENSATIONS OF SIGHT AND SOUND. Abiotrophy and Other Lectures. By Sir William R. Gowers, M.D., F.R.C.P., F.R.S.
Philadelphia: P. Blakiston's Son & Co., 1904.

For many years it has been the custom of Sir William Gowers to gather together the various articles contributed by him to medical journals and publish them in the form of small manuals. Such articles form the contents of this little volume. Originally prepared in the form of lectures, he has carefully revised them, and brought them up to date. The subjects considered in this small octavo volume of 250 pages are Subjective Visual Sensations, Subjective Sensations of Sound, Abiotrophy, or Diseases from Defect of Life, Myopathy, Metallic Poisoning, Syphilitic Disease of the Nervous System, Syringal Hemorrhage into the Spinal Cord, Myasthenia, Ophthalmoplegia, and a final chapter upon the "Use of Drugs," which although written originally some years ago by the author represents his therapeutic views to-day. We are glad to note that so successful a man as Sir William Gowers asserts that his views as to the value of drugs and the proper method of their employment depend very largely upon the thorough training which he obtained in the early years of his professional life, when he laid the foundations of successful specialism in a course of general practice. Surely he is correct in the belief that in these modern days we often make specialists out of men who are not even good general practitioners.

AFTER-TREATMENT OF OPERATION. Manual for Practitioners and House Surgeons. By P. Lockhart Mummery, F.R.C.S. Eng.
New York: William Wood & Co., 1903.

From the fact that this extremely important subject is, as a rule, treated in a fragmentary manner in the larger textbooks on surgery, Mummery concludes, and it is to be hoped justly, that there is a place for a small book devoted entirely to the after-treatment of operations. This is quite true, provided the subject-matter be dealt with in an essentially practical manner.

The first chapter is introductory in nature, and deals with such subjects as posture, the prone position being the one of preference. All elderly persons, he states, should be nursed in the semirecumbent posture. Undue pressure on the sacrum is prevented by the use of what is called the "Sister Dorris" support. After laparotomy it is taught that the patient should be allowed to turn on his side. For sleeplessness after operation morphine is the drug of choice, and this is also given for pain, though phenacetine is strongly commended. The thirst is slacked by giving water freely, the caution being observed that not more than half a pint be administered at one time. Even if it causes sickness, it is held that the water is beneficial in washing out the stomach. As to postoperative insanity,

the main safeguard lies in a careful preparation of the patient beforehand.

In the chapter devoted to the treatment of wounds there is an interesting study of temperature charts. The directions for subsequent dressings are extremely sensible. The treatment of hemorrhage is such as is usually found in text-books. Allingham's method of plugging the rectum is fully described. There is an interesting chapter on shock, and the treatment is given in detail, strychnine being advocated. Suprarenal extract is merely mentioned, and the dose and method of its administration are not considered of sufficient importance to be embodied in the text. It is satisfactory to note that Crile's admirable experiments on transfusion have been considered. The treatment of postanesthetic vomiting includes the immediate washing out of the stomach where vomiting is feared, and the giving of half a pint of water to drink. Lung complications are dismissed with a very few words. To thrombosis following operations is devoted a chapter, as is also one upon postoperative rashes, and drug poisons. Then follow chapters on operations on the mouth, nose, and pharynx, the head and neck, the thorax and the abdomen, genito-urinary tract, the rectum, and the joints.

There is a brief appendix containing useful suggestions in regard to rectal feeding, subcutaneous feeding, diet, massage, exercises, and artificial appliances.

The book, though useful and containing many valuable suggestions, is by no means complete.

COMPEND OF GYNECOLOGY. By William H. Wells, M.D. Third Edition, Revised and Enlarged; 145 illustrations.
Philadelphia: P. Blakiston's Son & Co., 1903.

This compend departs from the familiar type from the fact that it is not in the form of questions and answers, but rather represents a summary of the essential teachings on the subject. The great popularity these compends have enjoyed at the hands of students, and their large sale to the general practitioner of medicine, prove their practical value, though perhaps, from the scientific standpoint, they all leave something to be desired. The present work, however, is particularly well done, and deserves the best that can be said of any of these text-books.

Correspondence.

LONDON LETTER.

BY GEORGE F. STILL, M.A., M.D., F.R.C.P.

At a recent meeting of the West London Medical Society the treatment of appendicitis was considered, and in face of the "fièvre opératoire" which has been so widely epidemic not only amongst surgeons but also amongst physicians during the past few years it was interesting to notice that the burden of the address was the tendency of appendicitis to spontaneous recovery—if I may be allowed to use the term "spontaneous" to cover the sequences of medical treatment as opposed to surgical. (Who shall say how often the supposed successes of our treatment are *post hoc* rather than *propter hoc?*) The statistics quoted were strongly against any routine treatment of appendicitis by operation; seventy per cent of cases of appendicitis get well on careful medical treatment alone, and the mortality from all varieties of appendicitis treated thus is only five per cent. Operation during the acute stage is indeed fraught with considerable danger; it shows a death-rate of twenty per cent, figures which would seem to support strongly Broca's statement that "l'opération immediate est plus grave que l'expectation armée." This view has been quoted also by Dr. Burney Yeo, who mentions that Treves also is "stoutly opposed" to hasty operative treatment of appendicitis. Mr. Lloyd in his address declared that the large majority of cases of appendicitis require no operative treatment. Hot or cold fomentations—the latter perhaps specially in the earliest stage of inflammation—should be applied, and leeches also are useful. He is in favor of giving a mild saline aperient followed by a simple enema during the earlier period of the disease, and if there is much abdominal distention he would give turpentine also in the enema; but the question of aperients he admitted is a difficult one and open to much difference of opinion. In most cases opium in some form is advisable. As to feeding he would allow no food by the mouth in acute cases except a few teaspoonfuls of dilute peptonized milk, or hot water, or

tea. The patient must be fed by rectum, and stimulants also should usually be administered this way, but there is no great objection to the patient sipping champagne or brandy occasionally. He was doubtful whether anything is to be gained from the administration of antiseptics by the mouth; salol, ten grains, three times a day, was however suggested. The various methods of operation were then considered.

We have heard so much recently of treatment by injections and inoculations of all sorts that it is interesting to hear something of the practical results, and particularly of the failures, with these methods: Mr. W. G. Spencer opened a discussion recently at the Medical Society of London on serum and other inoculations in pyogenic infections. He thought that the administration should be as early as possible, so as to neutralize the toxins before irreparable lesions had occurred. Antistreptococcus serum has been used in erysipelas, puerperal fever, endocarditis, septic pharyngitis, malignant scarlet fever, and pneumonia; undoubtedly there have been failures, but at the same time there is some justification for the use of this treatment. To be of any value, however, the injections must be given not only early in the disease, but also in full doses and at short intervals—for instance, every three or four hours—and in severe cases it might be better to inject into the veins rather than subcutaneously. Dr. A. E. Wright pointed out the value of dead cultures of staphylococci, which had been injected in a series of cases with the view of accumulating protective substances in the tissues of the patient. This treatment has been found of value in chronic or recurrent forms of staphylococcal infection, such as boils, sycosis, and acne. In scarlet fever some of the complications are undoubtedly streptococcal in origin; but Dr. E. Goodall expressed himself as doubtful of any great value from the serum treatment; in puerperal fever also Dr. W. Gow has seen unfavorable results from serum injections. Dr. Poynton also stated that harmful results from such treatment are on record.

The part played by the pneumococcus in producing lesions of other parts of the body than the lung and pleura has been brought into prominence within the past few years. An acute inflammation of joints, a pneumococcal arthritis, is now generally recognized as a complication of pneumonia; but even more important than this is the affection of the peritoneum which sometimes occurs. Sir Dyce Duckworth and Prof. Howard Marsh recently reported at the Clinical Society the case of a woman aged twenty-seven years who within a day or two after an acute onset, with headache, rigor, and a temperature of 104°, showed signs of acute peritonitis. It was thought to be a case of typhlitis, and laparotomy was done. A dilated appendix was removed, but there was general peritonitis, and from the turbid fluid in the peritoneal cavity a pure growth of pneumococcus was obtained. Three days later fluid appeared at the left base, and an empyema was evacuated. The woman slowly recovered. A very similar case in a girl aged eight years was reported by Dr. F. Taylor; in this also a left empyema followed the peritonitis. Other cases have been recorded, and whilst in most perhaps the lung is the primary focus of infection, it may be that, as Dr. J. H. Bryant suggested, the microorganism sometimes reaches the peritoneum from the intestinal canal. But undoubtedly peritonitis is a rare complication of pneumonia. Dr. J. Fawcett stated that in 182 autopsies on cases of pneumonia there were only five in which there was peritonitis. Sir Dyce Duckworth said that it is impossible to distinguish the pneumococcal character of peritonitis unless the abdomen is opened, but suggested that the association of peritonitis with herpes might point to pneumococcal infection.

There has been considerable stir in the daily papers during the past month over the proposal to improve and extend the existing structure of St. Bartholomew's Hospital. A large section of the lay press has opposed this vigorously on the ground that such a hospital would be more useful and less costly if removed to the suburbs. All are agreed that it is most unfortunate that just at a time when King's College Hospital is appealing to the public for three hundred thousand pounds, which it sorely needs for its removal to the poor suburb of Camberwell, another great hospital should also appeal to the public for an even larger sum. But it is certain

that St. Bartholomew's serves a great need where it stands, and moreover that its present structure requires extensive additions if it is to be adapted to modern requirements. It is to be hoped that neither of these two great hospitals will be allowed to suffer from want of "the wherewithal."

PARIS LETTER.

By R. H. Turner, M.D. (Paris).

Professor Debove, dean of the Paris Faculty of Medicine, has recently described in one of his clinical lectures a curious case of diabetes without glycemia. The patient was a young woman eighteen years old, and was found to eliminate 72 grammes 50 of sugar daily. She was of a nervous temperament, and suffered from constipation and indigestion. On examining the blood only 1 gramme 80 of sugar per liter was found, which is about the normal amount. According to Professor Debove there is only one other case of this kind known, and it occurred in a patient of Kolisch and Ruber, who published the report of the case in the *Wiener klinische Wochenschrift* for June, 1897. The patient excreted 50 to 80 grammes of sugar a day, but her blood only contained 1 gramme 40 of sugar per liter.

In an article published recently in the *Presse Médicale*, Dr. Romme discussed the efficacy of omentopexia in cirrhosis of the liver in connection with an operation performed by Lenzmann, and described in the *Deutsche medicinische Wochenschrift*. The condition of the liver is not the only important factor in deciding whether the operation will be successful or not, but also the existence of a collateral circulation and the state of the heart. If the latter is very much affected the operation may have an excellent effect in reducing its amount of work; and Lenzmann describes the excellent results he obtained in a case where the heart was manifestly dilated and there was a slight degree of icterus. Two punctures, one before and one after the operation, were found necessary.

At a recent meeting of the Academy of Medicine Dr. Renaut, of Lyons, spoke of the efficacy of opotherapy in cases of urinary insufficiency. A maceration of kidney is, according to him, the most efficacious agent in opening up a kidney blocked by edema. It has a most intense action on enuresis. The normal excretion is soon brought about without the kidney being injured. The quantity of albumin found in the urine is diminished noticeably, and may disappear for a long period. When taken a certain length of time, it may cause a number of minor accidents, such as itching, urticaria, attacks of perspiration, and after its use during ten days some disturbance of the stomach. This maceration should be prepared daily. In answer to a question put by Dr. Albert Robin, Dr. Renaut remarked that the casts disappeared in this case. As for the chlorides he does not consider them a poison for the kidneys, as subcutaneous injections of saline solution are well tolerated by uremic patients. (This latter statement does not seem to be quite in accordance with recent work on the subject of elimination of the chlorides, and it may be that in certain forms of chronic nephritis large saline injections are hardly beneficial.)

During the last few years there have been several important epidemics of typhoid fever in different German towns, such as Gelsenkirchen, Saarbrück, Sarrebourg, Strasburg, and the imperial government has sought some means of checking these outbreaks. Dr. Koch, who is a member of the superior sanitary committee, believes that the disease takes place oftener by contagion than is generally thought, and that water is only a momentary vehicle of contagion. The bacillus persists in the patient a very long time, sometimes as much as six months. Witness a case cited by Danitz, of the Koch Institute, where the patient, a woman, had some bacilli in her urine, and infected her husband. To recognize the bacilli, Koch employs a medium prepared with broth, gelose, peptone, nutrose, lactose, and krystall-violet, and prepared first by Drigalski and Conradi. Colonies of typhoid bacilli grow within twenty-four hours in this medium, without any change of color, whereas coli bacilli produce a reddish coloration with litmus paper. Krystall-violet prevents the development of the germs of the air. As a result of these investigations, it was decided to isolate the patients in temporary hospitals, and to carry out most severe disinfection.

An early diagnosis was found most essential, and was made by cultures, the Widal test, or Pfeiffer's reaction on the guinea-pig. These various measures have certainly diminished the amount of sickness from typhoid fever amongst civilians as well as in the army.

It seems that tuberculosis is increasing noticeably amongst French peasants, and the reason of this is obligatory military service. Attention has already been drawn to the fact that recruits are not sufficiently examined before being incorporated into regiments, and Dr. de Lavarenne states that last year only thirty seconds was allowed for each recruit in the department of the Seine. As a result of this young men suffering from consumption in its first degree are sent into barracks, where they not only lose their strength, but also are a source of contamination for others. Certain country physicians state that they find tuberculosis in 60 to 70 per cent of the cases they are called upon to treat, and the infection is due in some cases to soldiers who come home invalided from their regiments.

Dr. von Stockum, surgeon-in-chief of the Rotterdam Municipal Hospital, has employed during the last few years a peculiar treatment for compound fractures; it had also been employed by one of his predecessors, van der Hoeven. The treatment consists in impregnating the focus of the fracture with Peru balsam. No disinfection of the limb is carried out, and only the large arteries are tied. The seat of fracture is filled with sterilized Peru balsam, the lips of the wound being held apart by pincers. The limb is moved very slightly so as to hasten the penetration of the balsam. The fracture is then reduced. If the orifice is very small, the seat of fracture is filled by means of a syringe. No gauze is used as a drain. Over this is placed a compress dipped in balsam, then some absorbent cotton, and a bandage. The fracture is then placed in a plaster cast. The first dressing is not touched for three weeks. The temperature goes up during the first four or five days, but returns to normal after the fifth or sixth day. When the dressing is taken off the wound is healed, or granulating well, and no pus is found. One or two dressings are still required in some cases. The results obtained by Dr. von Stockum are really well worth noting. Out of ninety cases, there were only four in which the treatment was unsuccessful. In three cases there was suppuration, which did not however require another operation. In one case gaseous gangrene set in, and it was found necessary to amputate. In eight cases a fistula formed, and a foreign body was usually found to be the cause of this complication. This treatment of Dr. von Stockum was described by the author at the Congress of Surgery held in Paris last October.

The treatment of fractures of the thigh has been discussed recently at several meetings of the Society of Surgery. Dr. Delbet, who belongs to the younger school of surgeons, described an apparatus which permitted one to walk, and which therefore was apt to lead to a quicker convalescence. Dr. Hennequin, who is the inventor of an apparatus known under his name, and usually applied by most French surgeons in such cases, described the advantages which resulted from the use of his apparatus. Professor Berger, who is one of the best known surgeons in France in connection with fractures and bone disease, remarked of this apparatus that it gave in almost all cases a perfect result. Exact reduction is obtained, ulterior stiffness of the knee and hip are prevented, permanent control of the fragments may be obtained, and massage can be carried out when needful. It is rare that more than one centimeter of shortening is noticed. As for apparatus which allow one to walk, Dr. Berger does not see their utility. Walking is limited and difficult under such conditions, and a limb enclosed in such an apparatus is perhaps not so well nourished. Professor Berger considers ambulatory apparatus useful in certain transverse fractures of the tibia, but not in V-shaped fractures, where such a treatment would have poor results. Dr. Lucas-Championnière also spoke enthusiastically of Dr. Hennequin's apparatus, which is far superior to all other apparatus, and especially Tillaux's, in that it allows free play of all the articulations. The application of this apparatus is most simple, it is easily watched, massage can be done readily, and the shortening is very slight. Dr. Championnière thinks it best not to use Hennequin's apparatus in fractures of the neck of the femur. Dr. Rou-

tier was not perhaps so enthusiastic, though he employs this appliance quite often. Dr. Michaux has also found this apparatus most excellent, as well as Drs. Broca and Bazy.

Professor Lejars has recently described in *La Semaine Médicale* an apparatus for fracture of the leg which he saw employed in Professor Saxtorph's service in Copenhagen. In a case of supramalleolar fracture, or of Dupuytren's fracture, the fracture is reduced, and the leg and foot are covered with a bandage of flexible gauze. A lath of lime-tree wood, about four centimeters long and two to three millimeters thick, is placed in water, which makes it more supple, and then made into a species of stirrup, one side going as high as the head of the fibula, the other to the inner condyle of the tibia. The lower portion remains a distance of about four centimeters from the sole of the foot. Small cushions of cotton-wool are used to protect the bone above and below. Another stirrup is sometimes placed. When this has been well placed, the stirrup is fixed by a first bandage of starched gauze, which is rolled around the upper part of the leg. A second bandage is placed on this; a third bandage is then placed lower down on a level with the tibiotarsal articulation, being rolled downward around the heel and back of it, so as to make a solid shell around the calcaneum. The apparatus is sufficiently dry in twenty-four hours. In ten to twelve days it is changed, and a few days after the patient can begin to walk with crutches, a thick sole being worn on the uninjured side.

QUININE AND METHYLENE BLUE IN MALARIAL INFECTION.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: Reading the symposium on malarial fever in the January number of your esteemed journal I see that "the men in the South and Southwest who are leaders in medical thought in their districts and who have had large experience in the treatment of these infections," who have written the different articles on the treatment of malaria in said number of your journal, have either not taken notice of certain well established facts in regard to the antagonism between quinine and methylene blue, or have not given them correctly. Allow me to quote from a lecture I gave at the New York Post-Graduate Medical School[1] what I said on this subject: "In the year 1891 Ehrlich and Guttmann recommended methylene blue in the treatment of malaria, because they had found that the malarial parasites took up this dye, that they had an election for it. And, indeed, Guttmann observed that the parasites disappeared from the blood gradually while methylene blue was given; that the patients were cured by the destruction of the plasmodia. The reports of all observers confirmed the fact of disappearance of the parasites under methylene blue treatment. It was found that the protoplasm of the parasites shrank, became compressed, and was colored blue, but that the methylene blue did not act on the nuclei of the plasmodia; and finally, that there existed an antagonism between the action of methylene blue and quinine, namely, that quinine destroyed the nucleus of the parasite, its chromatin, and methylene blue the plasma.

"Now we know that methylene blue will have a curative effect in those forms of malaria in which the plasma is most developed, and quinine in those in which the nuclei are the most developed and the plasma more or less wanting. The form which is most decidedly affected by methylene blue is that of the crescents, which consist almost entirely of plasma, while on the other hand juvenile forms of plasmodia which have very little plasma remain unaffected by methylene blue, but are very sensitive to quinine. The full-grown parasites, the principal part of which consists almost entirely of plasma, are indifferent to quinine, but most sensitive to methylene blue; they are completely destroyed by it."

I quote these remarks because Dr. John T. Moore, who wrote the article "Substitutes for Quinine in the Treatment of Malarial Fever," which forms part of the symposium, perhaps did not read the original communication of Guttmann and Ehrlich, but only an imperfect abstract of it, for the most essential points of these authors' observations he does not consider.

Yours truly,

A. ROSE.

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[1] Methylene Blue and Methyl Blue. *The Post-Graduate*, No. 9, 1901.

Ayn Rand